



Carleton College
FIFTEENTH ANNUAL CALENDAR

FACULTY OF ARTS AND SCIENCE
SCHOOL OF PUBLIC ADMINISTRATION

DAY AND EVENING DIVISIONS
1956-57

How to Register

- New full-time students enrolling for a degree, diploma or certificate will take all of these steps.
 - New part-time students enrolling for a degree, diploma or certificate will take steps 1, 2 and 5.
 - Returning full-time students will take steps 4 and 5.
 - All other students, including returning part-time undergraduates and graduate students, and part-time students not enrolling for a degree, diploma or certificate, take step 5 only.
1. Complete application for admission on form available from the Registrar's Office. Applications should be submitted to the Registrar well in advance of term opening.
 2. Attach certificates of former schooling (Junior Matriculation and any studies pursued subsequently) to application for admission, or arrange for them to be sent to the Registrar.
 3. When application has been approved, (*a*) arrange for physical examination by own physician and (*b*) have him report results to the College on the Personal Health Record form available from the Registrar's Office. This report must be completed and submitted to the College before final registration.
 4. Prior to fall registration *each year*, submit evidence of having had a chest X-ray within six months prior to the opening of classes. This may be arranged, free of charge, at the May Court Clinic, 374 Besserer Street, Ottawa, any time after May 1st. (Carleton students may be examined, except in July, on Tuesday, Wednesday or Thursday, 2 to 4 p.m. During registration week, Sept. 17-21, special hours for students are: Daily, 9 to 11.30 a.m.) If examined elsewhere, furnish evidence of a negative report.
 5. During the appropriate registration period specified under The Academic Year (p. 3), come to the College to (*a*) arrange final selection of subjects, (*b*) complete registration forms, (*c*) pay fees, (*d*) receive class and library admission cards, and (*e*) complete required aptitude tests.
 6. Full-time Students enrolling for the first time are to report to the College, Monday morning, September 17, at 9 o'clock.
 - College office and library hours are listed inside the back cover.

As this Calendar is published several weeks before the opening of the session, the College reserves the right to make whatever changes circumstances may require, including cancellation of particular courses.

CP 174

Carleton College

FIFTEENTH ANNUAL CALENDAR

DAY AND EVENING DIVISIONS

for the academic year

1956-57

FIRST AVENUE AT LYON

OTTAWA 1, ONTARIO

CANADA

Telephone: CEntral 5-5161

Table of Contents

	PAGE
How to Register.....	Inside Front Cover
The Academic Year.....	3
Historical Statement; College Charter.....	4
Chancellor, President and Vice-Chancellor, Board of Governors.....	6
Officers of Administration.....	7
Senate of the College.....	8
Officers of Instruction.....	9
Summary of Day and Evening Courses.....	16
College Services and Facilities:	
Class Hours.....	18
Course Numbers.....	18
Facilities.....	18
Student Activities.....	19
Student Services.....	19
Military Training.....	21
Fees.....	24
Withdrawal and Refund.....	25
Financial Aid for Students.....	26
General Regulations:	
Classification of Students.....	43
Credit for Senior Matriculation Courses.....	43
Substitution for Prescribed Subjects.....	43
Course Load.....	43
Attendance.....	44
Standing.....	44
Failure and Repetition.....	46
Examinations.....	46
Proficiency in English.....	48
Library Regulations.....	48
Academic Costume.....	49
Details of Courses Offered:	
Arts.....	50
Admission Requirements.....	50
Course Requirements:	
Bachelor of Arts—Pass Course.....	51
Bachelor of Arts with Honours.....	53
Commerce.....	55
Admission Requirements.....	55
Course Requirements.....	56
Engineering.....	58
Admission Requirements.....	58
Course Requirements.....	59
Journalism.....	63
Admission Requirements.....	64
Course Requirements.....	65
Public Administration, School of.....	68
Bachelor of Arts with Honours in Public Administration.....	69
Certificate in Public Service Studies.....	70
Graduate Diploma in Public Administration.....	72
Master of Arts in Public Administration.....	73
Science.....	75
Admission Requirements.....	75
Course Requirements:	
Bachelor of Science—Pass Course.....	75
Bachelor of Science with Honours.....	77
Bachelor of Science with Honours in Applied Physics.....	78
Pre-professional Courses.....	79
Details of Subjects.....	83
College Office Hours; Library Hours.....	148

The Academic Year

1956

Summer Session	
May 23, 24, 25	Registration for summer session (7 to 9 p.m.).
May 28	Summer session classes begin.
July 2	Observance of Dominion Day. College closed.*
July 15	Last day for applications for supplemental examinations.
Aug. 6	Civic Holiday. No classes.*
Aug. 15	Supplemental examinations begin.
Aug. 27	Last day of summer session classes.
Aug. 29, 30	Summer session examinations.
	*Classes will meet instead on the following day.

Winter Session

Sept. 3	Labour Day. College closed.
Sept. 17-20	Registration for classes in day and evening divisions:

Monday, Sept. 17: 2-4 and 7-9 p.m.	Registration of new students.
Tuesday, Sept. 18 2-4 and 7-9 p.m.	Registration of new students.
Wednesday, Sept. 19 2-4 and 7-9 p.m.	Registration of returning students.
Thursday, Sept. 20 2-4 and 7-9 p.m.	Registration of returning students.
Monday to Thursday, Sept. 17-20 inclusive 7-9 p.m.	Registration of evening students.

Sept. 24	Classes begin in all courses, day and evening.
Oct. 8	Thanksgiving Day. No classes.
Nov. 16	Last day for applications for summer session supplemental examinations.
Dec. 14	Last day of classes in the first term, day and evening divisions.
Dec. 15-21	Mid-year examinations, and summer session supplemental examinations.

1957

Jan. 2	Final examinations in first term half courses.
Jan. 3	Second term begins in day and evening divisions.
March 30	Last day of classes in the second term, day and evening divisions.
April 7-18	Final examinations in day and evening divisions.
April 19-22	Easter week-end. College closed.
April-May	Summer Survey School for Engineering students (4 weeks, dates to be announced).
May 17	Convocation for the conferring of degrees.

Historical Statement

Carleton College, established by The Ottawa Association for the Advancement of Learning in the summer of 1942, opened its first classes on September 21st in that year. In the first three years, teaching was done in evening classes only, in rented premises, and by part-time instructors. Instruction was given in the subjects of Grade XIII (Ontario) and first year university, with a few courses in the elements of public administration.

On March 19, 1945, day classes in matriculation courses were opened for the benefit of war veterans. In the following years, as the number of veterans diminished, civilian students were admitted to day classes.

In September, 1945, courses in Journalism and in the first year of Engineering were added to those already provided in Arts, Science and Commerce, and all these programmes were consolidated in a Faculty of Arts and Science.

The first degrees of the College, three Bachelor of Journalism and three Bachelor of Public Administration, were conferred on October 23, 1946.

On February 6, 1947, the College sustained a severe blow in the loss by death of Henry Marshall Tory, D.Sc., LL.D., D.C.L., F.R.S.C., first President of the College and the leader more responsible than any other for the success attained by the College in the first five years of its existence. On February 18, 1947, Murdoch Maxwell MacOdrum, M.A., Ph.D., Vice-President of the College, was appointed by the Board of Governors to succeed Dr. Tory as President.

Upon Dr. MacOdrum's death on August 1, 1955, following eight years of outstanding leadership, the Board of Governors appointed James Alexander Gibson, M.A., D.Phil., Dean of the Faculty of Arts and Science, as Acting President of the College.

On January 31, 1956, Claude Thomas Bissell, M.A., Ph.D., Vice-President of the University of Toronto, was appointed President, taking office on July 1, 1956.

In the summer of 1947 the College announced its plans for the organization of complete four-year Pass Courses and five-year Honours Courses which would lead to the degrees of Bachelor of Arts, Bachelor of Science and Bachelor of Commerce. The third year in all these courses was made available to students of the College in September, 1947, the fourth year in September, 1948, and the fifth year of certain Honours Courses in September, 1949. The first Pass degrees in Arts, Science and Commerce were conferred in May 1949, and the first Honours degrees in May 1950. A programme of studies leading to a

Graduate Diploma in Public Administration was introduced in 1952. A School of Public Administration was established in 1953 and in the following year candidates were accepted for the M.A. degree in that field. The first M.A. degree was conferred in May, 1955.

By May 1956 the College had conferred 839 Bachelor's degrees. On February 26, 1954, it conferred its first honorary degree of LL.D. on Dag Hammarskjöld, Secretary-General of the United Nations; on May 21, 1954, the second on Sir Douglas Copland, High Commissioner for Australia in Canada; and on May 18, 1956, the third on Hugh Llewellyn Keenleyside, Director-General, Technical Assistance Administration, United Nations, and an original member of the Board of Governors.

On November 23, 1954, Dr. C. J. Mackenzie was installed as second Chancellor of the College, succeeding Dr. H. S. Southam, who had served as first Chancellor of the College from June 19, 1952 until his death on March 27, 1954.

The first full-time teaching appointments in the ranks of lecturer, assistant professor, associate professor, and professor became effective on September 1, 1947. These appointments, and all subsequent appointments to the teaching staff, have carried from the beginning the appropriate privileges of professional tenure.

As of June 19, 1943 the College became an incorporated body. The act of incorporation, together with the instrument, became the Charter of the College. In order that the power to grant degrees should be specifically recited in a charter document, the College applied to the Legislature of the Province of Ontario for this and other academic powers which were subsequently incorporated into *The Carleton College Act, 1952*. By the instrument of incorporation (now merged into the Charter) Carleton College is endowed with university powers, with "authority to grant in all branches of learning any and all university degrees and honorary degrees, and diplomas" and "power to establish and maintain such faculties, schools, institutes, departments, chairs and courses of instruction as shall be deemed meet by the Board."

On June 11, 1952, the College was made a member of the National Conference of Canadian Universities, and on February 26, 1953, a member of the Association of Universities of the British Commonwealth.

The College is non-sectarian and co-educational. Its conduct and management is vested in a Board of Governors.

Enrolment in the winter session 1955-1956, in day and evening divisions, included 495 full-time students and 820 part-time students in courses offered for academic credit, and 297 registered in non-credit extension courses; a total, excluding duplicates, of 1598.

Chancellor

CHALMERS JACK MACKENZIE, C.M.G., M.C., B.E., M.C.E., D.Sc.
D. ENG., LL.D., D.C.L., F.R.S., F.R.S.C., M.E.I.C.

President and Vice-Chancellor

CLAUDE THOMAS BISSELL, M.A., Ph.D.

Board of Governors

Chairman

JAMES E. COYNE, B.A., B.C.L.

Secretary

CLARENCE CECIL GIBSON, Q.C.

Treasurer

VICTOR S. CASTLEDINE, Esq.

Members Ex-Officio

The Chancellor

The President and Vice-Chancellor

Elective Members

Retire 1956

A. A. CRAWLEY, F.C.A.

H. R. T. GILL, Esq.

MCGREGOR EASSON, B.A., D.Paed.

F. W. WHITE, Esq.

Col. C. M. EDWARDS, D.S.O.

C. C. GIBSON, Q.C.

Two vacancies

Retire 1957

J. E. COYNE, B.A., B.C.L.

FRANK G. PATTEN, B.A., B.Paed.,
F.C.I.S.

C. FRASER ELLIOTT, C.M.G., Q.C.

The Honourable Mr. Justice
I. C. RAND, B.A., LL.B., LL.D.

KENNETH A. GREENE, O.B.E.

W. C. MACARTNEY, D.D.S.

The Honourable
NORMAN P. LAMBERT, B.A.

T. R. MONTGOMERY, Esq.

Retire 1958

V. S. CASTLEDINE, Esq.

The Honourable NORMAN McL.
PATERSON, F.C.G.S.

W. M. CONNOR, Esq.

JOHN E. ROBBINS, M.A., Ph.D.

C. H. HULSE, Esq.

E. W. R. STEACIE, O.B.E., Ph.D.,
D.Sc., LL.D., F.R.S., F.R.S.C.

A. E. MACRAE, B.Sc., LL.D.

The Honourable Brooke Claxton,
P.C., D.C.M., Q.C., B.C.L., LL.D.

Officers of Administration

President

CLAUDE THOMAS BISSELL,
M.A. (Toronto), Ph.D. (Cornell)

Dean of the Faculty of Arts and Science

JAMES ALEXANDER GIBSON,
B.A. (British Columbia), M.A., B.Litt., D.Phil. (Oxford)

Director of the School of Public Administration

RONALD OLIVER MACFARLANE,
M.A. (Queen's), Ph.D. (Harvard)

Registrar

JOHN ALEXANDER BUCHANAN McLEISH, M.A. (McGill), Ph.D. (Cornell)

Assistant Registrar

ELIZABETH M. BUCKLEY, B.A. (Queen's)

Student Personnel Assistant

JEAN ALEXANDRA LOATES
B.A. (Carleton)

Medical Adviser

ERIC L. DAVEY, M.D., D.P.H. (Toronto)

Bursar

FREDERICK JAMES TURNER, B.Com., M.A. (Toronto), F.C.I.S.

Accountant

REGINALD M. WALTERS

Administrative Assistant

CECIL V. HOTSON, B.J. (Carleton)

Librarian

HILDA G. GIFFORD, B.A., B.L.S. (McGill)

Assistant Librarians

DORIS MAY HONEYWELL, M.A. (Queen's), B.L.S. (Toronto)
ELIZABETH WINNIFRED BREWSTER, B.A. (New Brunswick),
M.A. (Radcliffe), B.L.S. (Toronto)
EDITH KIRK ADAMSON, B.A. (Carleton), B.L.S. (Toronto)

Director of Athletics

NORMAN D. FENN, B.S., M.Ed. (Springfield)

Senate of the College

Members Ex-Officio

CLAUDE THOMAS BISSELL, M.A., Ph.D.

President of the College

Professor JAMES A. GIBSON, M.A., B.Litt., D.Phil.

Dean of the Faculty of Arts and Science

Professor R. OLIVER MACFARLANE, M.A., Ph.D.

Director of the School of Public Administration

Professor LORNE N. RICHARDSON, M.A., M.Sc.

Professor WILFRID EGGLESTON, M.B.E., B.A., F.A.G.S.

Professor M. S. MACPHAIL, M.A., D.Phil., F.R.S.C.

Professor H. H. J. NESBITT, M.A., Ph.D., D.Sc., F.Z.S.

Professor W. J. McDUGALL, B.A., C.A.

Members appointed by the Board of Governors upon nomination by the Senate

Associate Professor JOHN M. MORTON, M.Sc., A.M., Ph.D.

F. J. ALCOCK, Ph.D., F.R.S.C., F.G.S.A.

FRANK H. UNDERHILL, M.A., F.R.S.C.

W. KAYE LAMB, M.A., Ph.D., LL.D., F.R.S.C.

WALTER B. HERBERT, B.A., LL.B.

Officers of Instruction

(Some changes and additions will take effect between the date of publication of this calendar and the opening of the session.)

SUMMER 1956

Instructor: H. L. Armstrong, M.Sc. (Toronto)

Mathematics

Instructor: Isabel Law Bayly, B.Sc. (Carleton), M.A., (Toronto)

Biology

Instructor: R. L. Beatty, B.A. (Toronto)

Mathematics

Instructor: G. S. Du Vernet, B.A., (King's), M.A. (St. Francis Xavier and Toronto)

French

Instructor: E. A. Forsey, M.A. (Oxford and McGill), Ph.D., (McGill)

Political Science

Instructor: J. C. Forster, B.A., (Cambridge)

Latin

Instructor: Michael Hornyansky, B.A. (Toronto and Oxford)

English

Instructor: Mark McClung, M.A. (Oxford)

Philosophy

Instructor: Stanley R. Mealing, B.A., (Alberta), M.A., B.Litt., (Oxford)

History

Instructor: Virginia Sawyer, A.B. (California), M.A. (Minnesota), M.B.A. (Chicago)

Economics

Instructor: Lawrie Booth Smith, B.Sc., (McMaster), M.S.A. (Toronto)

Biology

Instructor: Ruth M. Underhill, B.A. (Saskatchewan), M.A. (Toronto)

English

Instructor: A. R. Veall, B. A., (McMaster)

Mathematics

Instructor: Helleni Webster, B.A. (London)

French

Instructor: George W. Wilson, B.Com., (Carleton), M.A. (Kentucky), Ph.D. (Cornell)

Economics

WINTER 1956-57

Professors, Associate Professors, Assistant Professors, Lecturers

Alexander Munro Beattie, B.A. (Toronto), A.M. (Columbia),
Associate Professor of English

Harold John Breen, M.A., Ph.D. (Western Ontario),
Assistant Professor of Psychology

Thomas Newton Brewis, M.Com., Ph.D. (Durham),
Assistant Professor of Economics

T. James S. Cole, B.Sc. (Eng.) (London), B.Sc. (Carleton), A.C.G.I.,
Lecturer in Physics (On leave of absence, 1956-57)

Gordon S. Couse, B.A. (McMaster),
Assistant Professor of History

Wilfrid Eggleston, M.B.E., B.A. (Queen's), F.A.G.S.,
Professor of Journalism

H. Edward English, B.A. (British Columbia),
Assistant Professor of Economics

David M. L. Farr, B.A. (British Columbia), M.A. (Toronto),
D.Phil. (Oxford),
Assistant Professor of History

Charles Paul Fleischauer, A.M., Ph.D. (Harvard),
Assistant Professor of French

Allan Guy Forman, B.A.Sc. (British Columbia),
Lecturer in Chemistry

Muni C. Frumhartz, B.A., (Toronto), A.M. (Columbia)
Lecturer in Sociology

Amal Chandra Ghosh, M.Sc. (Calcutta),
Assistant Professor of Physics

James Alexander Gibson, B.A. (British Columbia),
M.A., B.Litt., D.Phil. (Oxford),
Professor of History

E. E. Goldsmith, Dipl. Ing. (Berlin), D.I.C. (London), M.E.I.C.,
A.M.I.E.E.,
Assistant Professor of Engineering

H. Scott Gordon, B.A. (Dalhousie), A.M. (Columbia),
Associate Professor of Economics (on leave of absence, 1956-57)

Walter E. Grasham, B.Sc., M.A. (Toronto),
Lecturer in Political Science

Patrick Arthur Hill, B.Sc. (London), Ph.D. (Columbia), F.G.S.,
Assistant Professor of Geology

- James M. Holmes, B.Sc. (New Brunswick), M.A. (Western Ontario),
Ph.D. (McGill),
Associate Professor of Chemistry
- Michael Hornyansky, B.A. (Toronto and Oxford)
Lecturer in English
- William Irwin Illman, B.A., M.Sc. (Western Ontario),
Assistant Professor of Biology (Botany)
- Pauline Jewett, M.A. (Queen's), Ph.D. (Harvard)
Assistant Professor of Political Science
- George B. Johnston, M.A. (Toronto),
Assistant Professor of English (on leave of absence 1956-57)
- Wilfred H. Kesterton, B.A. (Queen's), B.J. (Carleton),
Assistant Professor of Journalism
- Paul MacDonell Laughton, B.A. (Toronto), M.Sc. (Dalhousie),
Ph.D. (Wisconsin),
Assistant Professor of Chemistry
- G. Ross Love, M.A. (Western Ontario), Ph.D. (Toronto),
Associate Professor of Physics
- Ronald Oliver MacFarlane, M.A. (Queen's), Ph.D. (Harvard),
Professor of Political Science
- Moray St. John Macphail, B.A. (Queen's), M.A. (McGill),
D.Phil. (Oxford), F.R.S.C.,
Professor of Mathematics
- William John McDougall, B.A. (Western Ontario), C.A.,
Professor of Accounting
- K. D. McRae, B.A. (Toronto), A.M., Ph.D. (Harvard)
Assistant Professor of Political Science
- Stanley R. Mealing, B.A. (Alberta), M.A., B.Litt. (Oxford),
Lecturer in History (on leave of absence 1956-57)
- John S. Moir, M.A., Ph.D. (Toronto),
Lecturer in History
- John M. Morton, M.Sc. (Dalhousie), A.M., Ph.D. (Princeton),
Associate Professor of Chemistry
- Allan M. Munn, B.Sc. (Queen's), M.Sc., Ph.D. (McGill), F.R.S.A.,
Associate Professor of Physics
- Herbert H. J. Nesbitt, B.A. (Queen's), M.A., Ph.D. (Toronto),
D.Sc. (Leiden), F.R.E.S., F.E.S.A., F.Z.S.,
Professor of Biology

- John A. Porter, B.Sc. (Econ.) (London),
Assistant Professor of Sociology
- Lorne N. Richardson, M.A. (Toronto), M.Sc. (McGill),
Professor of Mathematics
- Donald C. Rowat, B.A. (Toronto), A.M., Ph.D. (Columbia),
Associate Professor of Political Science (on leave of absence 1956-57)
- Richard James Semple, M.A. (Toronto), A.M. (Princeton),
Assistant Professor of Mathematics
- F. Ellenor M. Swallow, M.A. (Alberta), Ph.D. (Cornell),
Assistant Professor of Classics
- S. G. Tackaberry, C.B.E., B.A.Sc. (Toronto),
Assistant Professor of Engineering
- James S. Tassie, B.A. (McMaster), M.A. (Toronto),
Assistant Professor of French
- Edmund Albert Otto Turnau, M.Sc. (McGill),
Assistant Professor of Biology
- G. J. van der Maas, D.Sc. (Amsterdam),
Assistant Professor of Physics
- Frank Robert Wake, B.A., Ph.D. (McGill),
Associate Professor of Psychology
- Bernard Wand, M.A. (Queen's), Ph.D. (Cornell),
Assistant Professor of Philosophy
- H. H. Weil, B.A., Ph.D. (Cambridge),
Assistant Professor of German
- James C. S. Wernham, M.A. (Aberdeen and Cambridge),
S.T.M. (Union),
Assistant Professor of Philosophy
- Gordon James Wood, M.A. (Toronto),
Assistant Professor of English
- J. Perry Young, B.A. (Queen's), D. ès L. (Bordeaux),
Assistant Professor of French

Sessional Lecturers, Instructors, Demonstrators, etc.

- F. J. Alcock, B.A. (Toronto), Ph.D. (Yale), F.R.S.C., F.G.S.A.,
Sessional Lecturer in Geology*

*Part time

- J. Douglas Ayers, B.A., B.Ed. (British Columbia), Ph.D. (Toronto),
Sessional Lecturer in Psychology*
- Frances Oakes Baldwin, B.A., B.J. (Carleton),
Sessional Lecturer in Journalism*
- Mavis Brown, B.A. (Manitoba),
Sessional Lecturer in Mathematics
- Harold Eric Comer, B.Sc. (Alberta), B.Com. (Carleton),
Sessional Lecturer in Mathematics*
- Murray E. Corlett, B.A. (Toronto),
Sessional Lecturer in Commercial Law*
- Douglas Keith Dale, B.A. (Queen's),
Sessional Lecturer in Mathematics*
- Thomas G. Donnelly, M.A. (Queen's),
Sessional Lecturer in Mathematics
- Earl Howard Dudgeon, M.A.Sc. (Toronto),
Demonstrator in Engineering*
- William R. Dymond, M.A. (Toronto), Ph.D. (Cornell),
Sessional Lecturer in Economics*
- Simon L. Eckstein, B.A., B.R.E. (Yeshiva), M.A. (N.Y.U.),
Sessional Lecturer in Religious Knowledge
- Tom Foley,
Seminar Leader in Journalism*
- Eugene A. Forsey, M.A. (McGill and Oxford), Ph.D. (McGill),
Sessional Lecturer in Political Science*
- J. C. Forster, B.A. (Cambridge),
Sessional Lecturer in Spanish*
- Myrna Friend, B.A. (McGill),
Assistant in English*
- R. Bruce Gamble, B.Sc. (McGill),
Instructor in Mathematics
- James C. Gardner, B.A. (Toronto),
Sessional Lecturer in Mathematics*
- Ronald Grantham, M.A. (British Columbia),
Sessional Lecturer in History*
- Gordon F. Henderson, B.A. (Toronto),
Sessional Lecturer in Public Law*

*Part time

- Walter B. Herbert, B.A., LL.B. (Alberta),
Seminar Leader in Journalism*
- Richard Hoff, Dr. jur. (Breslau),
Sessional Lecturer in German*
- J. L. Howland, M.A. (Toronto), Ph.D. (Harvard)
Sessional Lecturer in Mathematics
- Burton F. Kelso, B.A. (Toronto), M.A. (Washington),
Sessional Lecturer in Geography
- D. I. Lalkow, M.D. (Moscow),
Sessional Lecturer in Russian*
- Jean M. LaPrairie, B.A. (Tufts),
Assistant in English*
- Victor N. Litwinowicz, Mag. Phil. (Warsaw), D.Litt. (Rome),
Special Lecturer in Russian*
- June Helm MacNeish, Ph.B., A.M. (Chicago),
Sessional Lecturer in Sociology (Anthropology)*
- John W. Mayne, B.Sc., M.A., (Acadia), M.Sc. (Brown),
Sessional Lecturer in Mathematics
- Roderick C. McDonald, B.A.Sc. (Toronto),
Sessional Lecturer in Engineering*
- F. H. McLearn, B.E. (Dalhousie), Ph.D. (Yale), F.R.S.C., F.G.S.A.,
Sessional Lecturer in Geology*
- J. M. McQueen, M.A. (Toronto),
Instructor in History*
- Carman H. Milligan, Mus.Bac. (Toronto), M. Mus. (Rochester)
Sessional Lecturer in Fine Arts (Music)*
- Peter Mackenzie Millman, B.A. (Toronto), A.M., Ph.D. (Harvard),
Sessional Lecturer in Astronomy*
- N. L. Nicholson, B.A., M.Sc. (Western Ontario), Ph.D. (Ottawa),
Sessional Lecturer in Geography*
- Vincent Pask,
Field Work Supervisor in Journalism*
- Mary Anne Phillips, M.A. (Toronto),
Reader in English*

*Part time

- June B. Pimm, B.A., M.Ps.Sc. (McGill),
Sessional Lecturer in Psychology*
- Bohdan Plaskacz, Lic.phil.litt. (Madrid),
Sessional Lecturer in Spanish*
- Lawrence M. Read, M.A. (Toronto),
Visiting Lecturer in Economics
- L. W. Rentner, B.A. (Toronto),
Sessional Lecturer in Mathematics*
- J. K. B. Robertson, M.A. (Toronto),
Sessional Lecturer in Fine Arts*
- Stephen C. Robinson, M.A.Sc. (British Columbia), Ph.D. (Queen's),
F.R.S.C.,
Sessional Lecturer in Geology*
- Virginia Sawyer, A.B. (California), M.A. (Minnesota),
M.B.A. (Chicago),
Sessional Lecturer in Economics*
- Harold Steacy, B.Sc. (Queen's),
Demonstrator in Geology*
- A. A. Sterns, Lic.com. (St. Gallen), Dr.rer.pol. (Berne),
Sessional Lecturer in Accounting*
- Ruth M. Underhill, B.A. (Saskatchewan), M.A. (Toronto),
Instructor in English*
- George S. Watts, M.A. (Queen's),
Sessional Lecturer in Economics*
- A. R. Veall, B.A. (McMaster),
Sessional Lecturer in Mathematics
- Clifford J. Webster, M.A., B.S. (Econ.), London, F.R.G.S.
Sessional Lecturer in Political Science
- Helleni Webster, B.A. (London),
Sessional Lecturer in French*
- Russell Allen Wendt, M.A. (Alberta),
Sessional Lecturer in Psychology*
- Fred E. Whitworth, B.A. (Saskatchewan), A.M., Ph.D. (California),
Sessional Lecturer in Psychology*
- Alice E. Wilson, B.A. (Toronto), Ph.D. (Chicago), F.R.S.C., F.G.S.A.,
Sessional Lecturer in Geology*
- Harry Wood, C.A.,
Sessional Lecturer in Accounting*

*Part time

Summary of Day and Evening Courses

FACULTY OF ARTS AND SCIENCE

Bachelor of Arts (B.A.)—Details on pp. 50-54

Pass Courses—offered in both day and evening divisions.

Honours Courses—first two years offered in both day and evening divisions; last three years in day division only.

Bachelor of Science (B.Sc.)—Details on pp. 75-78

Pass Courses—offered in both day and evening divisions.

Honours Courses—first two years offered in both day and evening divisions; last three years in day division only.

Bachelor of Commerce (B.Com.)—Details on pp. 55-57

Offered in both day and evening divisions.

Bachelor of Journalism (B.J.)—Details on pp. 63-67

First two years offered in both day and evening divisions; last two years, and postgraduate year, offered in day division only.

Certificate in Engineering—Details on pp. 58-62

Offered in the day division only.

Master of Arts (M.A.) and Master of Science (M.Sc.)

Except in Public Administration (see below) the College is not yet prepared to announce courses leading to the master's degree. However, applications from outstanding candidates in certain fields will be entertained.

Pre-professional courses—See p. 79

SCHOOL OF PUBLIC ADMINISTRATION

Bachelor of Arts with Honours in Public Administration (B.A.)—
Details on pp. 69-70

First two years offered in both day and evening divisions; last three years in day division only.

Certificate in Public Studies (C.P.S.S.)—Details on p. 70

Offered in evening division only.

Graduate Diploma in Public Administration (Dip. Pub. Admin.)—
Details on pp. 72-73

Offered in both day and evening divisions.

Master of Arts in Public Administration (M.A.)—Details on pp. 73-74

Offered in day division only, except with permission.

COURSES FOR THOSE WHO ARE NOT CANDIDATES FOR CERTIFICATE, DIPLOMA, OR DEGREE

Subjects in the curricula of the Faculty of Arts and Science and the School of Public Administration are open to persons who do not wish to study for a certificate, diploma or degree, providing that they have the required background for those they choose.

As an extension service, non-credit courses in subjects of cultural and vocational value are open to members of the public. (See special extension bulletins.)

COURSES IN CENTRES OUTSIDE OTTAWA

By agreement with other universities of Ontario, Carleton College is prepared to offer university courses in centres outside Ottawa in the counties of Carleton, Dundas, Grenville, Lanark and Renfrew, and to consider applications for academic credit for courses taken from other universities in other centres.

College Services and Facilities

Class Hours

Most classes (day and evening) meet for three hours a week. Those involving laboratory work usually meet for that purpose for an additional two or three-hour period once a week.

Summer session classes usually meet for two and one-half hours on each of two evenings a week.

Class timetables are published separately for the day and evening divisions, and may be obtained from the Registrar's Office.

Course Numbers

In 1952 courses were numbered according to the following pattern:

50-99 Preparatory courses

100-199 Courses usually taken in the first year

200-299 Courses usually taken in the second year

300-399 Courses open to senior undergraduates or graduate students

500-599 Courses open to graduate students only.

In the section Details of Subjects (pp. 83 ff.) of this calendar, former course numbers are shown in brackets following new course numbers, e.g. Economics 210. [2].

Facilities

The College is housed in a four-storey brick building, set on a small campus in the Glebe, one of Ottawa's residential districts, about ten minutes by street car or bus from the centre of the City.

In addition to classrooms and seminar rooms, facilities include engineering, chemistry, biology, geology and physics laboratories; an audio-visual aids centre including equipment for sound motion picture projection, film-strip and slide projection, and radio workshop activities; a canteen; an auditorium equipped for stage productions. Completed in 1951, a new library building provides study space for 200 students at one time and accommodates 40,000 volumes. The School of Public Administration occupies a house across the street from the main college building. Nearby is a three-storey students' union and a recreation building which provide accommodation for Students' Association offices, *The Carleton* (student weekly newspaper), reading rooms, games rooms, darkrooms, radio transmitter, club rooms and a student lounge. Athletic activities are carried on in the gymnasium and playing fields of Lansdowne Park about six blocks from the College, and the gymnasia of nearby secondary schools.

In 1953 the College acquired a new campus site of 130 acres, about two miles south of the present buildings. During the past two years the Carleton College Architectural Associates—Mr. Watson Balharrie, Mr.

Eric Arthur, Mr. John Bland, Mr. Leo Dirasser, Mr. A. J. Hazelgrove, Mr. Hart Massey, and Mr. Campbell Merritt—have developed a master plan for the development of the site and have completed details of the first buildings to be erected: a Science building, and a Library which will also house the administrative offices.

Student Activities

All students in the day and evening divisions of the College are members of, and pay the fees of, the Students' Association. The Students' Council, executive body of the Association, is elected by the students in the spring of each year.

Activities sponsored by the Students' Association, through its Council, include the publication of a weekly newspaper, *The Carleton*; dances and parties; women's, dramatics, radio, short story, poetry, choral, language and camera clubs; chess, bridge and sports clubs; commerce, science and engineering societies; a debating society, a model parliament and political clubs; international affairs organizations and an international students' club; religious associations; welfare fund campaigns; and a wide variety of educational and recreational programmes.

An Athletic Board, composed of representatives of faculty and students and responsible to the President, sponsors and supervises a programme which includes the College band, recreational activities, intramural and intercollegiate activities.

Student Services

Health. Under the supervision of the College Medical Adviser a Student Health Service is provided for the protection and promotion of the health of the student body. Its primary purposes are:

- (1) To supervise the health of all full-time students and to ascertain their fitness for academic work.
- (2) To investigate the physical fitness of all students who wish to participate in college athletic and recreational activities.
- (3) To provide a health consultation and advisory service for students. Those with serious health defects are referred for treatment as necessary.
- (4) To provide emergency treatment and medical care for athletic injuries and minor illnesses.
- (5) To plan a health education programme designed to conserve and promote the overall health of the student body.

Prior to initial registration at the College, each full-time student is required to submit, on a personal health record form provided by the College, a certificate of medical examination performed by his family physician. *Each year*, in addition, a full-time student will submit evidence

of having had a chest X-ray within six months prior to the opening of classes. This may be arranged, free of charge, at the May Court Clinic, 374 Besserer Street, Ottawa, at any time after May 1st. (Carleton students may be examined, except in July, on Tuesday, Wednesday or Thursday, 2 to 4 p.m. During registration week, Sept. 17-21, special hours for students are: Daily, 9 to 11:30 a.m.). Unless the X-ray has been arranged through the College it will be necessary for the student to furnish evidence of a negative report. X-ray facilities for part-time students will be made available by the College and such students are encouraged to have an annual chest X-ray.

(Students who object to these examinations on religious grounds will provide the Medical Adviser with a written statement of the grounds on which they object.)

Each year before participating in College athletic activities, each student will report to the Medical Adviser and obtain a certificate of medical fitness which will be submitted to the Director of Athletics.

The Medical Adviser will re-examine any student he considers should be given further attention, as indicated by his review of pre-registration health record forms. Any student requesting re-examination may avail himself of the services of the Medical Adviser who will be available in his office in the main building at stated periods.

The College is not responsible for expenses incurred as a result of injuries sustained by students while participating in athletic activities. Information regarding available accident insurance may be had on request from the College Bursar.

Employment. A Student Placement Service is operated by the College. Located in the Registrar's office, it offers assistance to students in obtaining part-time employment during the academic year, full-time employment during the summer vacation period, and permanent employment upon graduation. Assistance is offered to alumni of the College at any time.

The Student Placement Service cooperates closely with the National Employment Service and the Civil Service Commission of Canada.

Housing. The College has no dormitories of its own, but a housing registry is maintained in the office of the Registrar, offering assistance to students wishing rooms or rooms with board. Such rooms are available within easy walking distance of the College.

Cost of room and board is about \$55 to \$65 a month. A room with breakfast and dinner rents for \$50-\$60 a month; with breakfast only, \$30-\$35; without meals, \$25-\$30; room with grill, \$30-\$35.

Numerous requests are received for students who will do part-time work in the home in return for their room and board.

Food. A canteen is located in the main College building. Several restaurants are within easy access of the College.

Counselling and Guidance. Services available to students are:

1. A series of *orientation lectures* on study methods, the use of the college library, the college curricula, and related topics are arranged for new students in both day and evening divisions in their first week at the College.

2. All undergraduates enrolling in the day division for the first time at Carleton College are required to take any tests deemed suitable for the orientation programme.

3. A library of *occupational information* is at the disposal of students, occasional lectures on specific occupational fields are arranged, and guidance in methods of seeking employment is provided.

4. Students may receive assistance in their planning of educational programmes, their choice of careers, and in the solution of their personal problems from: (a) Instructors; (b) Administrative officers, including Mrs. Jean Loates, B.A., Student Personnel Assistant; (c) Counsellor—Norman D. Fenn, B.S., M.Ed.; (d) Consultants—F. R. Wake, B.A., Ph.D., Associate Professor of Psychology, and F. E. Whitworth, A.M., Ph.D., Sessional Lecturer in Psychology.

5. The counselling services of the Department of Veterans' Affairs also are available to student veterans.

6. The Registrar is available for consultation each Monday evening, in addition to his regular day-time office hours.

Military Training

Students attending Carleton College who are interested in the work and life of the Canadian Armed Services will find that excellent provisions have been made for potential officer candidates either for the Reserve or the Regular Forces.

The College has available three training divisions in co-operation with the armed forces. Young men and women who are medically fit, have a sound academic record, and possess officer-like qualities are able to receive training during the academic year in the service division of their choice. In addition, summer training facilities are provided for officer cadets whether they choose a programme which leads to the Regular *or* Reserve branches of the forces. Cadets are entitled to pay and allowances for each day of duty, including summer training, at rates laid down by the armed services.

The following officers will be glad to describe in detail the programmes of their respective forces:

Navy: Lieutenant Commander Jacques Bonneau, R.C.N. (R)
Commanding Officer, U.N.T.D.; or
Staff Officer, U.N.T.D., H.M.C.S. "Carleton",
Dow's Lake, Ottawa, Ontario; or
Instructor Lieutenant E. A. Turnau, R.C.N. (R), (Room
407)
Telephone 9-68431

Army: Officer Commanding, Major W. H. Kesterton; or
Second in Command, Captain J. M. Holmes; or
Resident Staff Officer, (Room 401),
Telephone CE 4-4123

Air Force: The Commanding Officer,
Wing Commander George Buxton; or
Flight Lieutenant Harold Brisbois,
Squadron Headquarters, 162 Waller Street; or
Flight Lieutenant Paul Laughton (Room 308)
Telephone 9-68615

Regular Officer Training Plan (R.O.T.P.)

Under the Regular Officer Training Plan, successful applicants who have completed senior matriculation are enrolled in the Armed Force of their choice and are provided with College or University training at public expense.

Training in the ROTP is divided into two basic phases each year. Cadets will attend their College or University for the academic term and then will be sent to the military unit of the Force in which they have been enrolled for the summer practical phase training.

Successful applicants will be enrolled as Naval Cadets in the Royal Canadian Navy, Officer Cadets in the Canadian Army, and Flight Cadets in the Royal Canadian Air Force according to their choice. They will attend the College or University selected. Undergraduates will complete the summer practical phase training programme as do the Reserve personnel of the appropriate University—Naval Training Division (RCN), Canadian Officers' Training Corps (Canadian Army) or University Reserve Training Plan (RCAF).

On successful completion of academic and military training, cadets will be promoted to Commissioned Officer rank in the Regular Force. The privilege of release, if desired, will be granted without obligation,

on the recommendation of his commanding officer, within the first nine months of the Cadet's service.

Cadets are obliged to maintain good standing academically in college and throughout military training. A cadet who fails a year at College or University may, on the recommendation of the faculty and the Service concerned, be permitted to attend a repeat year at his own expense and, if successful, be reinstated.

Students in attendance at the university in a year of study beyond senior matriculation may apply through officers of the UNTD, COTC or URTP listed above, any time after the university year has begun. *Candidates not in attendance at university should make written application to the Regular Officer Training Plan Selection Board, National Defence Headquarters, Ottawa, before July 1st of the year of entrance.*

Fees

Tuition Fees

In courses other than Engineering:

- | | |
|---|----------|
| (a) Tuition, per subject..... | \$ 60.00 |
| (For all courses prescribed under the honours or graduate programme, \$300) | |
| (b) Additional for each subject involving laboratory work | 15.00 |

e.g. A full-time day student taking five subjects, one of them involving laboratory work, would pay tuition amounting to \$315.

A part-time evening student taking two subjects, one of them involving laboratory work, would pay tuition amounting to \$135.

Engineering:

- | | |
|--|----------|
| (a) Tuition, per year of two terms..... | \$395.00 |
| (b) Additional fee for summer survey camp..... | 25.00 |

Miscellaneous Fees (winter session only)

- | | |
|---|-------|
| (a) Full-time students in Engineering, per year..... | 23.00 |
| (Students' Association \$16, Athletics \$5, Health Service \$2) | |
| (b) Full-time students in other courses, per year..... | 22.00 |
| (Students' Association \$15, Athletics \$5, Health Service \$2) | |
| (c) Part-time students, per subject..... | 2.00 |
| (Students' Association \$1.50, Athletics 50c—Maximum \$5 per student) | |

Examination Fees

- | | |
|--|-------|
| (a) Supplemental and special final examinations, written at Carleton College, per paper..... | 5.00 |
| (b) Examinations written at a centre other than Carleton College..... | 10.00 |

Graduation Fee

- | | |
|---|-------|
| Payable on or before April 1st of the graduating year.... | 12.50 |
| (This fee covers the ordinary expenses of the graduation exercises and, in addition, the cost of providing academic dress for the use of the graduating class). | |

Transcript Fee

For each transcript of academic record, except for the first two which are supplied free of charge..... 1.00

Deferred Payment Fee

Payable when fees are paid in instalments:

	<i>In Two Instalments</i>	<i>In More Than Two Instalments</i>
(a) for half course	.50	1.00
(b) for 1, 1½, or 2 courses	1.00	2.00
(c) for more than two courses	2.50	5.00

Fees may be paid by any of the following plans:

1. Payment in full at the time of registration.
2. Payment in *two* instalments:
 - (a) At registration— $\frac{1}{2}$ of the total tuition, *plus* Miscellaneous Fees (where applicable), and Deferred Payment Fee (see above).
 - (b) At or before mid-session—the remaining half of the total tuition fee.
3. Payment in *five* instalments (winter session only):
 - (a) At registration— $\frac{1}{5}$ of the total tuition, *plus* Miscellaneous Fees (where applicable), and Deferred Payment Fee (see above).
 - (b) On the 15th of October, November, January and February— $\frac{1}{5}$ of the total tuition fee.

WITHDRAWAL AND REFUND

Students who are forced to withdraw from a course, or from the College, are required to notify the Registrar in writing and to give their reasons for withdrawal. The College assumes the obligation of carrying the student and accommodation on a yearly basis. Therefore:

- (a) All tuition credits and refunds will be made entirely at the pleasure of the College.
- (b) Credits or refunds will be granted only as follows:
 - (1) Cash refunds may be granted in cases where students are compelled to withdraw on account of serious and continued personal illness.
 - (2) In case a student who is regularly employed during the day is sent out of the city permanently by his employer or compelled so to change his working hours as to prevent his continuing at the College, a refund may be granted.
 - (3) Cash refunds may also be granted in cases where the student

is compelled to withdraw for other personal reasons, provided that these reasons are satisfactory to the College authorities.

- (c) Tuition not refunded or used may, if a certificate of credit is secured from the Bursar, be applied upon subsequent courses pursued in the College, provided such courses are taken within two years of the date of withdrawal of the student.
- (d) Miscellaneous fees and Deferred Payment fees normally are not refundable.
- (e) The portion of the tuition fee refunded is determined by the date of application for refund, not the date of withdrawal.
- (f) No application for refund will be considered if received after February 15th in the winter session, or after July 31st in the summer session.

FINANCIAL AID FOR STUDENTS

1. The College welcomes the offer of scholarships, prizes, medals, and bursaries. The Registrar will be glad to send, on request, information as to the functions of scholarships and bursaries, and also a statement of particular needs at present in the financial aid programme of the College.
2. Scholarships, prizes, medals, bursaries, and loan funds may be accepted from donors at the discretion of Senate on appropriate recommendation of the President. Awards of scholarships, prizes, and medals will be made by Senate to qualified candidates of merit; but the Senate may withhold any such award if no candidates of merit present themselves. The award of scholarships, prizes, and medals shall be final when formally announced by the College.
3. The standing of students being considered for any such awards shall be determined on the basis of courses taken for credit and shall not take account of extra courses being taken for no credit.
4. (a) No limitation shall be placed upon the number of prizes and medals which any one student may win in any one year. (b) A student may be declared the winner of as many scholarships as he may win as a qualified candidate of merit but, in the case of awards carrying a major financial amount, such student will normally receive the proceeds only of the largest among these major amounts. (c) Winners of scholarships and prizes may resign the monetary value but retain the honour of such awards, and their names will be published as winners. In cases arising under 4(b) or 4(c), the monetary amounts so relinquished may be awarded *by reversion* if merited.

5. Students who may apply for entrance scholarships at colleges or universities other than Carleton College will not be restricted in applying for similar scholarships at Carleton College. They will be requested, however, to inform the College of such other applications.
6. Undergraduate scholarships and bursaries of \$200 or more which are under the jurisdiction of the College will ordinarily be paid in two instalments, one in October and one in January. The College reserves the right to withhold the payment of the second instalment if the attendance or conduct of the student is not satisfactory. Awards of less than \$200 will ordinarily be paid in one instalment, in October.
7. The College does not guarantee the award of any scholarship, prize, medal or bursary other than those created from funds of the College. Those awards based upon gifts of individuals or associations other than the College will be awarded only after the funds required have actually been received from the donors.

Scholarships

A. Undergraduate Scholarships tenable at Carleton College.

Union Carbide Canada Limited, Undergraduate Scholarships. (Next awarded, 1957).

Value \$500 a year until graduation. Open to graduates of secondary schools who (1) have outstanding scholastic records and personal reputation and are recommended by their school authorities, and (2) intend to enter business or industry and have the necessary talents and ambition for such a career.

One such scholarship was awarded to a student entering Carleton College in 1954. In 1956 another scholarship was awarded, and hereafter awards will be made to maintain two Union Carbide scholars in attendance at the College in all subsequent years.

Applications for 1957 will be required not later than May 1st. Further information and appropriate application forms may be obtained from the Registrar.

Donor: Union Carbide Canada Limited. Established 1954.

Mercy Neal Southam Entrance Scholarships

Four \$500 scholarships will be awarded annually, if merited, to students entering the second year of Arts, Journalism, Commerce, or Science, or the first year of Engineering at Carleton College. Established in 1949 under the terms of a bequest of the late Wilson Mills Southam, the scholarships are in memory of his grandmother, Mercy Neal Southam.

Scholarship applications, accompanied by a formal application for admission to course, and supported by a letter of recommendation from the High School Principal, must be submitted to the Registrar, Carleton College, not later than May 1, 1957, on forms available from the College. To be eligible, a student must be qualified academically and physically for admission without conditions to one of the courses named.

Candidates from the secondary schools must write at least *six* Ontario Grade XIII final examination papers in 1957 and will be judged on their *eight* best papers. If there should be no eligible candidate from one of the Ottawa high schools named or from any of the other eastern counties schools, a scholarship may be awarded to one of the runners-up. Final selection will be made by the College Senate on recommendation by the Committee on Admission and Studies.

The scholarships will be paid in two instalments — \$250 applied to tuition in the fall of 1957 and, if the winner is still in attendance and making satisfactory progress, \$250 applied to tuition in the fall of 1958.

One each of the four Mercy Neal Southam Entrance Scholarships and of the three University Entrance Scholarships (described in succeeding paragraph) will be awarded, if merited, to the applicant with highest standing from each of the following: Glebe Collegiate Institute, Lisgar Collegiate Institute, Nepean High School, Ottawa High School of Commerce, Ottawa Technical High School, and Fisher Park High School, and one to the applicant with the highest standing from schools (other than those just named) in the counties of Renfrew, Lanark, Carleton, Russell, Prescott, Glengarry, Stormont, Dundas, Grenville, and Leeds.

University Entrance Scholarships

Three \$500 scholarships will be awarded annually, if merited, to students entering the second year of Arts, Journalism, Commerce, or Science, or the first year of Engineering, at Carleton College. The conditions of award and administration of these University Entrance Scholarships will be the same as those governing the Mercy Neal Southam Entrance Scholarships, as described in preceding paragraphs.

The Ottawa Citizen Scholarship

A scholarship valued at \$900 will be awarded annually, if merited, to a student entering Carleton College from a high school in any one of the following counties in the Ottawa district: nine in Ontario — Carleton, Dundas, Glengarry, Grenville, Lanark, Prescott, Renfrew, Russell and Stormont — and four in Quebec — Gatineau, Hull, Papineau and Pontiac.

Candidates with junior or senior matriculation may apply for admission to first or second year of Arts, Commerce, Journalism or Science.

Candidates with senior matriculation may apply for admission to Engineering.

A student admitted with junior matriculation standing will receive \$225 per year for a period of four years; a student admitted with senior matriculation standing will receive \$300 per year for a period of three years; always provided that, in both cases, the student is registered as a regular full-time student of Carleton College and maintains a satisfactory academic standing.

A candidate for this scholarship must present evidence of high scholastic attainment, together with a record of outstanding participation in the extra-curricular activities of his school.

Donor: The Ottawa Citizen. Established 1955.

Ottawa Business and Professional Women's Club Scholarship.

Value \$100. Awarded annually to a girl entering Carleton College with high matriculation standing from one of the Ottawa collegiates and high schools. Donor: Ottawa Business and Professional Women's Club. Established 1946.

Regional Entrance Scholarships.

Value \$500 each. Four are awarded annually, if merited, on the basis of outstanding achievement in secondary school studies, to students entering Carleton College with junior or senior matriculation standing—one from each of the following regions:

(a) The provinces of British Columbia, Alberta, Saskatchewan and Manitoba, the Yukon and the Northwest Territories.

(b) The province of Ontario.

(Students completing secondary school studies in any of the following Ottawa Schools will *not* be eligible: Glebe Collegiate Institute, Lisgar Collegiate Institute, Nepean High School, Fisher Park High School, Ottawa High School of Commerce, Ottawa Technical High School—they may apply for Mercy Neal Southam Entrance Scholarships, University Entrance Scholarships, and the Ottawa Citizen Scholarship.)

(c) The province of Quebec.

(d) The provinces of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland.

Each scholarship winner will have \$125 applied to the cost of tuition at the time of registration in his first year at Carleton College, and, if he is still in attendance and making satisfactory progress, \$125 at the time of registration in each succeeding year, not exceeding four years in all.

Scholarship applications, accompanied by a formal application for admission to course and supported by a letter of recommendation from the high school principal, must be submitted to the Registrar, Carleton College, not later than May 1st, on forms available from the College.

These scholarships were established, by the College, in 1952.

Canadian Legion Scholarships.

The Dominion Command, Canadian Legion, B.E.S.L., offers one scholarship, valued at \$400, and the Ontario Command offers additional scholarships, valued at \$400 each, to be awarded to secondary school graduates entering university. They will be awarded only to persons who are eligible for membership in the Canadian Legion or to the children of deceased veterans or to the children of parents either of whom is eligible for membership in the Canadian Legion. At least two additional scholarships will be awarded, if merited, to students resident in each Legion District of the Ontario Command, upon entry to a college or university in Ontario. Application should be made by June 30 to the Provincial Secretary, Ontario Command, Canadian Legion, 82 Charles Street East, Toronto.

Ottawa Women's Canadian Club War Memorial Scholarship.

Value approximately \$100.00. Awarded annually to a student progressing from first to second year in Carleton. Preference is given to veterans. Endowed 1946.

Falkland Chapter (I.O.D.E.) Scholarships.

(1) Value \$100.00. Awarded to an outstanding student progressing from one year of course to another in Carleton College. Donor: Falkland Chapter, I.O.D.E. Established 1950.

(2) Value \$50.00. Terms as above. Established by the Falkland Chapter, I.O.D.E., 1955.

Clendinnen Scholarship in Biology.

Value \$75.00. Awarded annually to an outstanding student proceeding from the fourth to the fifth year of the honours course in biology at Carleton College. Established 1951, in memory of Mr. and Mrs. T. E. Clendinnen, by their daughter.

Canadian Club of Ottawa Scholarship.

Value \$200. To foster interest in public affairs, Canadian citizenship and Canadian history, this award is presented annually to a student entering the final year of a degree course who has shown outstanding promise in studies and work relating to national development in Arts and Letters, Humanities and the Social Sciences. Donor: The Canadian Club of Ottawa. Established 1952.

Ottawa Woman's Club Scholarship.

Value \$100. Awarded annually to an outstanding student progressing from one year of course to another in Carleton College, preference to be given to women students. Donor: The Ottawa Woman's Club. Established 1952.

University Women's Club of Ottawa Scholarship.

Value \$100. Awarded annually to a deserving student progressing from one year of course to another, preference to be given to a woman student where other qualifications are equal. Established 1952, in honour of Dr. Alice E. Wilson, by The University Women's Club of Ottawa.

N.F.C.U.S. Interregional Study Exchange Plan.

Since 1952, Carleton College has participated in the Interregional Study Exchange Plan sponsored by the National Federation of Canadian University Students.

Each year, six students from universities other than English-language institutions of Ontario and Quebec may be granted free tuition at Carleton for the studies of their penultimate year. Two Carleton students may be chosen from among those who apply for permission to study, tuition free, at French-language universities in Quebec, or universities of the west coast, the prairies or the Maritimes.

Carleton students wishing to apply for participation in the plan should consult the Registrar before January 31. Selection will be made by a committee composed of the Registrar, the Dean of the Faculty of Arts and Science, the President of the Students' Council, and the External Affairs Chairman of the Students' Council. All applications will be subject to the approval of the host university.

Jean MacOdrum Memorial Scholarship.

Value \$50. Awarded annually, if merited, to a woman who is a full-time undergraduate proceeding to the final year of a degree course, who has a better than average academic record, and who has shown participation and leadership in extracurricular activities.

Each candidate is nominated by at least three students and selection is made by a committee of the Hleodor Society composed of a first-year student, a second-year student, a final-year student, at least one member of the executive of the Hleodor Society, the Registrar, and a member of Faculty. Nominations must be forwarded to the Registrar not later than February 15.

Established 1953, in memory of Mrs. M. M. MacOdrum, by the Hleodor Society of Carleton College.

SCHOLARSHIPS SPECIFICALLY IN ENGINEERING:

J. P. Bickell Foundation Scholarship. Value \$1,200, to be awarded to a top-ranking student in First Year Engineering who subsequently registers in the Second Year of Engineering in Course B. Carleton students may obtain full details of the scholarship from the Registrar. Donor: J. P. Bickell Foundation, Toronto. Established 1955.

Regent Vending Machines Limited, Scholarship. Value \$100. Awarded annually to an outstanding student in Engineering proceeding from the first to the second year in the Engineering curriculum. Donor: Regent Vending Machines Limited. Established 1954.

Spartan Air Services Limited, Scholarship

Value \$500. To be awarded to a deserving top-ranking student in First Year Engineering. The Scholarship will be payable in two equal instalments, one at the conclusion of the successful candidate's first year of Engineering; the other at the conclusion of his second successful year at Carleton.

Donor: Spartan Air Services Limited, Ottawa. Established 1956.

B. Post-graduate Scholarships tenable at Carleton College: Fellowships, Scholarships, and Bursaries in Public Administration.

The following awards are available for study in the academic year 1956-57:

1. For candidates for the Master of Arts Degree—two fellowships of \$1,250 each, one of \$1,000, and two of \$750 each. Fellows with dependents may apply in addition for bursaries of up to \$1,000.
2. For candidates for full-time study toward the Diploma in Public Administration—five scholarships of \$500 each.
3. For candidates for part-time study towards the Diploma or the M.A. in Public Administration—five to ten scholarships, each equivalent to the tuition fee for the current year.

Providing that there are fully qualified applicants presently employed in the Public Service of Canada, at least one of the fellowships

and scholarships for full-time study will be awarded to a public servant. More than one, or indeed all of these awards, may be won by public servants.

Applications for these fellowships, scholarships, and bursaries must be received by the Registrar of Carleton College by April 1st, 1957, and announcement of the awards will be made shortly thereafter. The required forms may be obtained from the Registrar.

C. Post-graduate Scholarships tenable elsewhere

Students are invited to watch the College bulletin board for notices of scholarships, and to consult the Registrar who has a number of publications outlining fellowships and scholarships available for study in the various universities in Canada and abroad.

Prizes

B'nai B'rith Awards

Two of \$50 each, awarded annually to students with superior academic records, progressing from one course-year to another in Carleton College. Donor: B'nai B'rith, Ottawa Lodge No. 885. Established 1947.

Faculty Club Prize.

Value \$25. Awarded by the Faculty Club of Carleton College to a student chosen by the President of the College. Established 1946.

National Council of Jewish Women Award.

Value \$50. Awarded on the recommendation of the Department of History to the student achieving the best standing in Canadian History. Donor: National Council of Jewish Women, Ottawa Section. Established 1950.

Lilian I. Found Prize for Poetry.

Value \$25. Offered annually for the best lyric of fifty lines or less submitted by an undergraduate of Carleton College by March 15. Details may be obtained from the Registrar's office. Donor: Mrs. Lilian I. Found. Endowed 1950.

Chemical Institute of Canada Prize.

Value \$25. Awarded as a book prize to the best student proceeding to the final year of the course leading to the degree of Bachelor of Science with honours in Chemistry. Donor: The Chemical Institute of Canada. Established 1950.

Engineering Institute of Canada Prizes.

For proficiency in engineering studies, a prize of \$25 is awarded to a student completing second-year Engineering, and a book prize of the value of \$10 is awarded to a student completing first-year Engineering. Donor: Ottawa Branch, Engineering Institute of Canada. Established 1947.

D. F. McKechnie Prize in Accounting.

The yield of a \$200 fund is used each year to purchase a book prize to be awarded, when merited, to a graduating student in Commerce for proficiency in the study of accounting. Donor: D. F. McKechnie, C.P.A. Endowed 1951.

The Juniores of National Council of Jewish Women Prize.

Value \$50. Awarded annually, if merited, on the recommendation of the Department of Psychology, to a third-year woman student majoring in Psychology, who is judged to be the most promising in this field. Donor: The Juniores of National Council of Jewish Women. Established 1956.

American Society for Metals Prize in Engineering.

Value \$25.00. Awarded annually to a student with high standing in the first year of the Engineering course. Donor: Ottawa Valley Chapter, American Society for Metals. Established 1951.

Henry Birks and Sons (Ontario) Limited, Award.

Value \$25. Awarded annually to a Carleton College student with a superior academic record who has contributed substantially to extracurricular activities. Donor: Henry Birks and Sons (Ontario) Ltd. Established 1951.

Wilgar Memorial Prize in English.

The yield of a \$200 fund is used each year for a book prize to be awarded to a Carleton College undergraduate who has shown excellence in essay-writing. Established 1951, in memory of the late W. P. Wilgar, Assistant Professor of English at Carleton College, 1948-50. Endowed 1952.

Henry Marshall Tory Award.

Presented annually to an outstanding graduating student who has shown a high degree of academic application, has indicated an interest in the College by broad participation in extracurricular activities of a constructive nature, has indicated qualities of leadership, and has attended Carleton College for at least three winter sessions.

Each candidate is nominated by at least five members of the Students' Association and selection is made by a committee composed of the President of the College, a member of the Board of Governors, the Registrar, a member of the Faculty Board, and three students chosen by the Students' Council.

The Winner's name is inscribed on the master trophy and he receives a miniature replica.

The award was established in 1950 by the Students' Council of Carleton College.

Prize of the Minister of Switzerland to Canada.

For excellence in the study of French, a book prize is offered annually by the Minister of Switzerland to Canada. Established 1953.

H. Carl Goldenberg Book Prize.

Value \$10. Awarded annually as a book prize for excellence in Journalism subjects taken in the third year of the Bachelor of Journalism Course. Donor: H. Carl Goldenberg, O.B.E., Q.C., of Montreal. Established 1953.

Armand J. Villeneuve Prize for Journalism Term Report.

Value \$100. Offered annually for the best term report submitted in the competition. To enter for the prize, a student must re-submit, by August 15th, the term report which he submitted in Journalism 350 the previous spring. Prize awarded on basis of content rather than format, but the latter will be taken into consideration. The prize-winning report will remain the property of the College and will be added to the Department of Journalism library. Donor: Armand J. Villeneuve, B.J. '50, B.A. '52. Established 1953.

Kenneth R. Wilson Memorial Award for Journalism Graduates.

Value about \$200. Offered annually to a student graduating in Journalism who, in the opinion of a board of selection, shows exceptional promise as a future reporter and interpreter of Canadian affairs. Endowed 1953, in memory of Kenneth R. Wilson, Ottawa Editor of The Financial Post, by a group of his personal friends.

Catherine Daumery Memorial Prize for Botanical Collection.

Value \$25. Awarded annually, if merited, on the recommendation of the Department of Biology, to a student who has submitted, by November 1st, an outstanding collection of mounted and identified flowering plants. Donor: Anonymous. Established 1953.

Elizabeth White Memorial Prize for Zoological Collection.

Value \$25. Awarded annually, if merited, on the recommendation of the Department of Biology, to a student who has submitted, by November 1st, an outstanding collection of insects or arachnids, properly preserved and identified. Donor: Anonymous. Established 1953.

French Embassy Book Prize.

For excellence in the study of French, a book prize is presented by the French Embassy in Canada. Established 1953.

Ottawa South Branch (W.C.T.U.) Prize in Sociology

Value \$50. To be awarded in 1957, if merited, to a student of Carleton College chosen by the Department of Sociology for excellence in the study of Sociology. Donor: The Ottawa South Branch of the Women's Christian Temperance Union.

Donald Lawrence Moulds Memorial Prize in English.

Value \$50. Awarded annually, if merited, on the recommendation of the Department of English Language and Literature, to an outstanding student proceeding beyond the second year of the pass or honours course in English. Established 1954 by Ernest Moulds, in memory of his son who was killed in action while serving as a Spitfire pilot in the R.C.A.F. overseas in World War II, 1942.

Alan Larocque Prize in Mathematics.

Value \$15. Awarded annually as a book prize to the highest ranking graduate in honours Mathematics. Donor: Alan Larocque, B.Sc., an honours graduate in Mathematics of Carleton College. Established 1956.

Medals

The Governor-General's Medal.

Awarded annually, provided first class standing is obtained, to the student standing at the head of the graduating class. Donor: His Excellency the Governor-General of Canada. Established 1952.

University Medals.

Awarded annually, when merited, to the graduating students standing highest in Arts, Science, Commerce and Journalism. Established 1949.

Senate Medals.

Awarded, when merited, to graduating students of outstanding academic achievement. Established 1952.

Bursaries

Applications for Dominion-Provincial Student-Aid Bursaries, Type A, for Atkinson Charitable Foundation Entrance Bursaries, and for Rotary Club and Lions Club Awards (for students entering university from secondary school) should be made through secondary school principals. Applications for Dominion-Provincial Student-Aid Bursaries, Type B (for students progressing from one year to another in university) should be made through the Registrar of Carleton College after the commencement of fall classes.

Applications for all other bursaries listed below should be made to the Registrar not later than August 31st.

General Bursary Fund

The sum of \$3,500 is available in 1956-57 to provide bursaries for students with satisfactory academic standing who, in the first or subsequent course-years, are in need of financial assistance. Established by the College, 1954.

Dominion-Provincial Student-Aid Bursaries.

Value up to \$500 each and tenable at the various colleges and universities of Canada, including Carleton College. They are awarded to "students of good character, whose health and physical fitness are satisfactory, who meet the required academic standing, and who, without financial assistance, could not continue their formal education".

Candidates must be residents of Ontario and have obtained at least second-class standing in the examinations of the year prior to that for which the bursary would be used.

Rotary Club of Ottawa Awards

Value up to \$400.00 each, awarded annually, on the basis of scholarship and financial need, to students from Ottawa schools entering a college or university. One or more of these may be held at Carleton College.

Lions Club of Ottawa Awards

Value up to \$400.00 each. Awarded annually to Ottawa students who, without financial assistance, could not continue their formal education. These may be held at Carleton College.

Ottawa Superfluity Shop Bursaries.

An annual sum of approximately \$180.00 is available to provide bursaries for veterans of World War I or World War II, or for the descendants of such veterans, who are students in good standing at Carleton College and in need of financial assistance. Endowed 1947.

Ottawa Citizens War Services Committee Bursary.

An annual sum of approximately \$60.00 is available to assist veterans, their dependents or descendants, who are students in good standing at Carleton College and are in need of financial assistance. Endowed 1948.

Gyro Club Bursaries.

Two bursaries of \$125 each. Awarded annually to male students of promise who have completed at least one academic year at Carleton College, who have specific professional or vocational goals, and who, without financial assistance, could not continue their formal education. Donor: Gyro Club of Ottawa. Established 1949.

Quota Club Bursary Fund.

The sum of \$200 is available for the year 1956-57 to aid women students in good standing who are in need of financial assistance. Donor: Quota Club of Ottawa. Established 1950.

Faculty Bursary Fund.

The fund exists to give assistance, in the final two years of course, to students who without financial aid would not be able to complete

their studies. Recipients are morally but not legally obligated to repay the amounts received, at some time after graduation, and in addition to contribute some additional sum either to this fund or to the Alumni Bursary Fund. Donors: Members of the Faculty of the College. Established 1950.

Pythian Sisters Bursary:

Value \$50. Awarded annually to a male student with satisfactory academic standing entering Carleton College from one of the Ottawa secondary schools. To be eligible, student must demonstrate need of financial assistance. Donor: Unity Temple No. 17, Pythian Sisters, Ottawa. Established 1954.

Alumni Bursary Fund.

Purpose and conditions of award are the same as those of the *Faculty Bursary Fund*. Donors: Alumni of Carleton College. Established 1953.

Atkinson Charitable Foundation Bursary Fund.

The sum of \$2,000 is available to assist students of Carleton College in the academic year 1956-57. Terms of award are as follows:

1. In addition to scholastic merit and financial need, goal and promise will be considered in selecting recipients.
2. Candidates must be residents of Ontario.
3. Applications may be for sums up to \$500.
4. An applicant must have completed at least one academic year and be enrolled as a full-time undergraduate in any course at Carleton College.
5. For one of the awards, preference will be given to candidates intending later to pursue studies in Theology.
6. Applications should be made on forms available from the Registrar's Office, not later than August 31, 1956.

Donor: The Atkinson Charitable Foundation. Offered for the first time in 1951, as an experiment in the provision of financial aid to students.

Atkinson Charitable Foundation Entrance Bursaries.

Value: \$400 for students living away from home, \$200 for students residing within commuting distance of the university. Candidates must be residents of Ontario and in need of financial assistance. They must obtain an average of at least 66% on eight Ontario Grade XIII examination papers, be qualified for entry to the degree course of their choice, and be sponsored by their high school principals. Application should be made through the high school principal before May 1st. Carleton College

is one of the Ontario universities at which these bursaries may be held. Donor: The Atkinson Charitable Foundation, Toronto. Established 1953.

Protestant Girls' Club of Canada Bursary

Value \$100. To be awarded annually to a Protestant girl or girls proceeding into the graduating year at Carleton College. Donor: The Protestant Girls' Club of Canada. Established 1955.

Arnhem Chapter (I.O.D.E.) Bursary

Value \$100. To be awarded in the academic year 1956-57 to a student with satisfactory academic standing who in the judgment of the President of Carleton College is in need and deserving of financial assistance. Donor: Arnhem Chapter I.O.D.E. Established 1955.

R. A. Beamish Bursary.

Value: approximately \$250. Awarded annually to a student entering or progressing from one academic year to another who, without financial assistance, could not continue his or her formal education. To be eligible, an applicant must be a resident of one of the eleven eastern counties of Ontario (Renfrew, Frontenac, Lanark, Leeds, Carleton, Grenville, Russell, Dundas, Prescott, Glengarry, Stormont). Donor: The R. A. Beamish Foundation. Endowed 1951.

South Ottawa Kiwanis Club Bursary.

Value \$250. Awarded annually to a student who has completed successfully at least one academic year in Carleton College and who, without financial assistance, could not continue college studies. Donor: Kiwanis Club of South Ottawa. Established 1951.

South Ottawa Kiwanis Club (Ladies Auxiliary) Bursary.

Value \$50. To be awarded in the academic year 1956-57 to a woman student who has completed one academic year at Carleton College, and who is in need of, and deserving of, assistance to continue studies as a full-time student. Donor: Kiwanis Club of South Ottawa (Ladies Auxiliary). Established 1956.

Rotary Club of Ottawa Bursary Fund.

The sum of \$200 annually is available to aid promising students who face financial need arising out of emergency expenditures. Applicants must have completed successfully at least one academic year in Carleton College and may apply for aid from this fund at any time during the academic year. Donor: Rotary Club of Ottawa. Established 1947; bursary fund, 1952.

Philemon Wright Chapter (I.O.D.E.) Bursary.

Value \$75. Awarded annually to a student with satisfactory

academic standing who is in need of financial assistance. Open only to residents of the Province of Quebec, with preference to those resident in the County of Hull and adjoining counties. Donor: Philemon Wright Chapter, I.O.D.E. Established 1952.

Ottawa South Branch (W.C.T.U.) Bursary

Value \$50. To be awarded in 1956-57, if merited to a student intending later to pursue studies in Theology, who has shown promise in both studies and student activities, and who is in need of financial assistance. Donor: The Ottawa South Branch of the Women's Christian Temperance Union.

Ottawa Business and Professional Women's Club Bursary.

Value \$100. To be awarded in the academic year 1956-57 to a woman student with satisfactory standing who has completed one academic year at Carleton College. Donor: The Ottawa Business and Professional Women's Club.

A.N.A.F. Veterans Capital Unit Bursaries.

Two of \$150 each, awarded annually to students entering or progressing from one year of course to another in Carleton College, who have satisfactory academic standing and are in need of financial assistance. Preference will be given to (a) children of the deceased veterans, (b) the dependents of parents either of whom is a veteran and who are ordinarily resident in the Province of Ontario or the Province of Quebec. Donor: Army, Navy & Air Force Veterans in Canada, Capital Unit 236, Ottawa. Established 1953.

Children of War Dead (Education Assistance) Act

This act provides fees and monthly allowances for children of veterans whose deaths were attributable to military service. Enquiries should be directed to the nearest District Office of the Department of Veterans Affairs.

Loan Funds

The college administers several loan funds which are available for short and long term loans to students in need of financial aid.

Loans made from funds held in trust by the College are in general limited to \$250 a year for any one student, with a maximum of \$600 total to one student. They are repayable after termination of undergraduate studies, and bear interest at the rate of 3% per annum beginning January 1st following the termination of studies. To be eligible for a loan from one of these funds, a student must have a satisfactory academic record and be able to show that he could not continue his studies without financial assistance.

General Loan Fund. Unrestricted. In addition to loans made on the general basis outlined above, one-month loans of up to \$10 may be made from this fund. Applications will be received by the Student Personnel Assistant in the Registrar's Office. Founded by Kenneth Brewster. Other donors: Women of Rotary, Office Staff of Carleton College, F. J. G. Cunningham, Katherine J. Milliken, Mrs. J. S. MacLean, the late Mrs. Lila Wilson, and several anonymous donors. Established 1948.

John W. Parker Loan Fund. To assist students in need of, and deserving of, financial assistance, who appear willing and able to repay their loans, and will normally be expected to have completed one academic year at Carleton College. Under normal circumstances, the maximum loan to a student shall be \$500 a year, but loans up to \$1,500 a year to students with dependents may be made, if merited. Donor: The late Mrs. John W. Parker. Established 1955.

Journalism Loan Fund. Reserved for students in the course leading to the degree of Bachelor of Journalism. Founded by The Canadian Women's Press Club, Ottawa Branch. Other donors: Rielle Thomson, Kenneth Wilson, Blair Fraser, Canadian Pulp and Paper Association, Bruce Hutchison, F. P. Galbraith, Serrell Hillman, T. W. L. MacDermot. Established 1948.

Commerce Loan Fund. Preference is given to students in the course leading to the degree of Bachelor of Commerce. Founded in 1949 by the class of Commerce '49. Other donors: Class of Commerce '50.

Zonta Club Loan Fund. For loans to Ottawa girls needing financial assistance while studying towards a degree at Carleton College. Girls interested in social studies and teaching will be given preference. Donor: The Zonta Club of Ottawa. Established 1948.

Lady Perley Chapter (I.O.D.E.) Loan Fund. Preference is given to veterans. Donor: Lady Perley Chapter, I.O.D.E. Established 1948.

Laurentian Chapter (I.O.D.E.) Loan Fund. Preference is given to students who are British by birth. Donor: Laurentian Chapter, I.O.D.E. Established 1950.

Arrangements may be made, on occasion, for assistance from funds administered by other organizations, among which are:

Veterans' University Loan Fund. Administered for the Department of Veterans Affairs to aid student veterans who are in receipt of allowances but need assistance to meet emergency expenses.

Royal Canadian Naval Benevolent Fund. The purpose of the Fund is to relieve distress and promote the well-being of naval personnel and their dependents both while serving and after discharge, except:

- (a) Former permanent force personnel with less than one year's service unless they had service during World War II.
- (b) Members of the Royal Canadian Navy (Reserve) with less than three year's service unless they had service during World War II.

Army Benevolent Fund. This fund exists to provide financial assistance to Army veterans in need. A student veteran may be considered for such assistance, however, only when he has received the maximum assistance for which he is eligible from the Veterans' University Loan Fund or when the Army Benevolent Fund Committee agrees that it would not be in the best interests of the veteran's welfare to request him to undertake the responsibility of the repayment of a loan.

R.C.A.F. Benevolent Fund (University Loan Fund). This fund was planned to assist in the education of discharged members of the R.C.A.F., their children and children of deceased personnel. Sums up to a normal maximum of \$300 may be borrowed and are repayable out of the following summer's earnings or after graduation, as preferred.

Rotary University Student Loan Fund. The Rotary Club of Ottawa administers a Student Loan Fund to assist worthy students, during their junior and senior years, to complete a regular university course at any recognized university in Canada. To be eligible an applicant must be a Canadian citizen, resident in the County of Carleton, Ontario, and a student in good standing eligible to enter the junior or senior year. Maximum loan is \$250 in one year, \$500 total.

Harry F. Bennett Educational Fund. Administered by the Engineering Institute of Canada, this fund is available to provide financial assistance to deserving students who have successfully completed their first year in engineering.

P.E.O. Sisterhood Educational Fund. On recommendation by a local chapter of P.E.O., loans may be made for educational purposes to women students who have completed successfully at least one academic year of university studies. Loans shall not exceed \$500 for one year of study or \$1,000 for two or more years. In the case of loans for graduate students or seniors completing a four-year course, the maximum amount may be available for one year of study.

Carleton College students may apply for loans from this fund. Further information may be obtained from the Registrar.

Further information regarding these sources of financial aid may be had from the Registrar.

General Regulations

Classification of Students

Students, whether in the day or the evening division, are classified as *undergraduates* or *graduate students* if they are properly matriculated for and proceeding to a degree, diploma or certificate; otherwise they are classified as *special students*. They are considered to be *full-time* students when enrolled for four or more subjects in an academic session, and *part-time* students when enrolled for fewer than four.

Credit for Senior Matriculation Courses

An applicant who has completed Junior Matriculation may be admitted and given credit for such Senior Matriculation subjects as are appropriate to the curriculum for the degree. He will be given an opportunity to make up his course deficiencies as part of his programme in the College.

No more than five senior matriculation subjects taken in a secondary school may be counted toward a Carleton degree.

Except by permission of the Committee on Admission and Studies, no student will be given credit for senior matriculation subjects passed in a secondary school system after he has been registered as an undergraduate in Carleton College. Such permission normally is granted only if the prescribed subject is not made available by the College. (This regulation governs students admitted as undergraduates in and after 1954.)

Substitution for Prescribed Subjects

A student whose mother tongue is not English, and who has not had secondary school preparation in one of the languages (other than English) taught in Carleton College, may apply to the Committee on Admission and Studies for permission to substitute an approved course in the humanities for the prescribed course in a language other than English.

Course Load

Normal course load for a *full-time* student in the winter session is five full courses. Except in the second year of the B.Com. course (in which $5\frac{1}{2}$ courses are prescribed) and in honours courses, no more than five full courses may be taken for credit in the winter session, unless by permission of the Committee on Admission and Studies. Students in the third and fourth years who wish to transfer from one course to another, must obtain the approval of their major departments. All transfers must be made within three weeks following the opening of classes.

A student who has been in full-time attendance at Carleton in a

winter session may take a course in the following *summer session* only if it is required to make up a deficiency, is recommended by his major department in lieu of a subject in the following winter session, or is taken as an extra subject for no degree credit.

Normal course load for a *part-time* student who is employed full time is one or two full courses in each winter session and one full course in each summer session. No more than two full courses may be taken for credit in a winter session and no more than one in a summer session, unless by permission of the Committee on Admission and Studies. Special students are not permitted to take more than two courses per session, except with permission.

The Committee on Admission and Studies seldom will permit a student to take an extra course for credit unless in the previous academic session he has obtained better than average standing. With the consent of the instructor concerned, however, an undergraduate student enrolled for degree credit or a graduate student in the day or evening division may audit courses (i.e., attend without the privilege of writing examinations) concurrently with those being taken for credit, without the necessity of registering for or paying tuition for such audited courses. The provision does not apply to the Summer Session programme, except as formally recommended by the major department.

Attendance

A student is expected to attend all lectures, discussion groups, seminars and laboratory periods of any course in which he is registered, whether such periods of work are formally scheduled by the College Registrar or informally announced by the instructor.

Each instructor will determine for his own courses the relation of class attendance to course grades, and whether attendance records shall be kept. Early in the session he will inform his students of his practice in this regard.

The Senate may, at any time, either during the term or after the close of the term, request any student to withdraw from the College if his conduct, attendance, work or progress is deemed unsatisfactory.

Standing

A student's standing in his year's work will be determined not only by the results of mid-year and final examinations, but also by the work of the whole term or session, including consideration of class tests, laboratory work, essays, attendance, progress and any other matters bearing on the candidate's worth as a student of the College.

Except in the course leading to the Certificate in Engineering (see below), standing in each course is graded by the letters A, B, C, D (all

unconditional passing grades) or F (failure). For the purpose of determining a student's average standing, a point value is assigned to each of these letter grades: A = 4, B = 3, C = 2, D = 1, F = 0.

To receive credit toward a degree a candidate must obtain at least a "D" grade in the work of each course. In order to receive second class standing in his year's work, a student must have obtained an average of at least 2.4 grade points. In order to receive first class standing in his year's work, he must have obtained an average of at least 3.4 grade points. Additional regulations regarding required standing are stated in the outlines of the various degree programmes, pp. 52-78.

In the course leading to the Certificate in Engineering, the standing in each course is graded as I (first class standing, 80-100%), II (second class standing, 65-79%), III (third class standing, 50-64%) or "F" (failure, below 50%). To receive credit toward the Certificate, a candidate must obtain at least third class standing in the work of each course.

Additional symbols used to indicate standing are as follows:

Aeg.—Aegrotat: absent from final examination but standing granted on basis of year's work (A student granted *aegrotat* may write a special examination for a grade in the course.)

Pass—Passed supplemental examination but not otherwise graded. (Grade-point value=1.)

Inc.—Term work incomplete; to be graded "F(ns)" if not completed within three months of final examination.

Abs.—Absent from final examination. (At the discretion of the instructor, an *undergraduate* or *graduate student* who is absent from the final examination may be graded "F(ns)" if his term work has been quite unsatisfactory.)

F(ns)—Failure; no supplemental examination allowed.

Wdn.—Withdrawn in good standing.

A student may not withdraw *in good standing* from any subject for which he is registered, after February 15th in the winter session or July 31st in the summer session, except by permission of the Committee on Admission and Studies. If the student should withdraw from a subject without such permission, and fails to write the final examination, his record will show that he was absent from the examination and he shall not have the privilege of writing a supplemental examination in that subject.

A candidate must obtain complete standing in the first year before registering in the third year, and complete standing in the second year before registering in the fourth year of any course.

Failure and Repetition

A student taking five or more subjects who fails in more than two subjects will be considered to have failed his year. A student taking fewer than five subjects who fails in more than one subject will be considered to have failed his year. In neither case will the student be permitted to write further examinations in any of the subjects of that year without repeating them, and will retain credit only in those subjects in which he obtained "C" or higher standing. (For regulations governing failure in Engineering, see page 62.)

A student who has failed his year at Carleton College or elsewhere may apply to the Committee on Admission and Studies for permission to repeat the year's work. If permission is granted he will be placed on probation for that academic year and must pass *all* subjects taken (at regular or supplemental examinations) in order to be restored to good standing. A student placed on probation in the evening division must pass five courses in succession in order to regain good standing. If a student on probation does not qualify for restoration to good standing at the conclusion of the probationary period, he will lose his status as an undergraduate.

Examinations

Mid-year examinations are held in all first-year and second-year lecture courses and in others at the discretion of the instructor, and final examinations in all courses, at the times listed under the Academic Year, p. 3. With few exceptions, a single, joint final examination is set for day and evening classes in the same subject—usually during morning or afternoon hours. In full courses in which no formal mid-year examinations are held, mid-year grades will be given, when possible, on the basis of assignments, tests and other term work during the first term. *Students who fail to write the mid-year examination without good cause will be penalized. Such cause must be stated in writing to the Registrar, for consideration by the Committee on Admission and Studies, not later than one week after the date on which the examination was held if he is to receive credit in the course in which the examination was missed, or permission to write a special final examination.*

In particular, a student who, because of illness, has failed to write the scheduled mid-year or final examination in any course may apply for *aegrotat* standing or for permission to write a special examination provided he presents to the Committee on Admission and Studies the appropriate (College) medical certificate, duly completed and signed by his attending physician or surgeon. Students actually under medical treatment from an attending physician or surgeon in the period immediately prior

to the examinations are reminded that it is their responsibility to notify the College that this situation exists if it is certain to affect their attendance at the examinations.

Course grades are released only by the Registrar. Year-end reports are mailed to students as soon as possible after the release of grades has been authorized. Upon the request of a student, a duplicate of his report will be sent to his employer or another designated person.

Special final examinations. A student who, for any reason, has not written a final examination on the appointed date may be required, or may apply for permission, to take a *special final* examination. Special final examinations, and arrangements for taking them, may be authorized only by the Committee on Admission and Studies. They are ordinarily written at the time of the supplemental examinations. For fee, see p. 24.

Supplemental examinations. All supplemental examinations in courses taught during the winter session are held in August, with the exception of supplemental examinations for January half-course finals — these supplementals are held in April. Summer course supplemental examinations are written in December. For exact dates, see *The Academic Year*, p. 3. Fees are shown on p. 24.

An undergraduate student who has been graded "F" on a final examination, but has not failed his year, may write a supplemental examination in that subject at the time of the next regular supplemental examinations. In such cases the supplemental examination ordinarily will be graded only "Pass" or "Failure".

A student who fails a course primarily because of unsatisfactory laboratory or term work may be graded "F(ns)", meaning that he may not write a supplemental examination in that course. The privilege of writing supplemental examinations will be thus denied only in special cases, and the student shall have the right of appeal to the Committee on Admission and Studies.

No supplementary examinations are given in courses beyond the first three courses of a major or minor subject for a degree with honours.

On compassionate or medical grounds, *or* to raise a grade in a course already passed, a student may apply to the Committee on Admission and Studies for permission to write a *special supplemental* examination. A special supplemental examination is the same as an *ordinary* supplemental examination except that it is graded on the scale A, B, C, D, F.

A student who applies for and is granted permission to rewrite a subject for higher standing, may do so, once only, at a regularly scheduled period, within one calendar year after passing that subject. (A student in the evening division must do so within two calendar years.)

Students are advised that when they write special supplemental examinations for the purpose of raising their standing, the final grade assigned in any subject will be based on the whole year's work, including the supplemental, and that the grade obtained in the supplemental may be the grade retained even when it is lower than the grade derived from the previous final examination.

If a supplemental examination is failed, the student will be required to repeat the course before coming up for examination in that course in any subsequent year.

Proficiency in English

All first-year students in Arts, Journalism, Commerce and Science take English 110 (English Composition). If this course is not passed in the first year, it must be repeated until passed. Thereafter, in any year of course, a student may be required to receive additional tuition in the use of the English language as prescribed by the Department of English, to which he may be referred, at any time, by an instructor in any department.

The Department of English, on the basis of a report by an instructor in another department, will decide whether the student ought to be required to take either the special short course in composition begun each January or an entire year's work, in the following academic year, in English 111 (Remedial English). If English 111 is prescribed, it will be added to the student's requirements for the degree.

Library Regulations

All persons taking courses in the College, and all graduates of the College resident in Ottawa, are entitled to use the library the year round.

During the winter session most books may be borrowed for one week, and renewed if not requested by another reader. Reserve books may not be renewed. If they are not returned when due, a fine of 25c. for the first hour or part of an hour, and 10c. for each hour or part of an hour thereafter, is charged. When books borrowed for one week are kept long overdue, they become subject to reserve book fines. During the summer months, most books may be borrowed for two weeks and no fines are charged.

Reference books may not be taken from the library.

Library hours are listed on the final page.

Every entering undergraduate will be required to complete satisfactorily an exercise in the use of the library, including the card catalogue, bibliographical sources, and standard reference works.

Academic Costume

For the Bachelor's and Master's degrees, the academic dress of Carleton College is of the design specified in the intercollegiate code. The hood is of *simple* shape, made of black *stuff*, and lined in silver with two chevrons of equal width inserted, that near the border, red, and that near the peak of the cowl, black. The border of the hood denotes the degree awarded, according to the following colour combinations: Arts—white; Journalism—white with a cord of black superimposed upon the border, set in $\frac{1}{4}$ " from the lower edge; Science—golden yellow; Commerce—drab; Public Administration—drab with a cord of dark brown superimposed upon the border, set in $\frac{1}{4}$ " from the lower edge. The Bachelor's hood is approximately three feet in length, with a two-inch border; the Master's, three and a half feet, with a somewhat wider border, and open to expose more of the lining.

The gown of the honorary Doctor of Laws degree is of the type described as *full*, of ankle length, and of a royal blue colour with revers and sleeves of a contrasting shade of light blue. The hood, made of the same royal blue material as the gown, with a purple border, is of the full rounded shape with a tippet, and open to the base so that the entire lining, which is similar to that of the lower degrees, is fully visible.

Details of Courses Offered

ARTS

Admission Requirements

(a) *To the First Year* of courses leading to the Bachelor of Arts degree:

Junior Matriculation—the Ontario Secondary School Graduation Diploma in the General Course (Grade XII), or an equivalent certificate, with the required standing in the following subjects:

1. English.
2. Mathematics (Algebra and Geometry).
3. History.
4. A language other than English.
5. Science (Physics and Chemistry; or Agricultural Science, Parts I and II) or an additional language.
6. Any *one* of: Music, Art, Home Economics, Commercial Work, Geography, Shop Work, Agriculture, an additional language.

Mature Matriculation—A person over the age of twenty-one years who, though lacking the admission requirements specified above, can give evidence of the likelihood of success in university studies, may be admitted *on trial*. If he completes successfully the subjects of the first year, his matriculation will be confirmed and he will be given credit for the year. Persons interested should consult the Registrar.

(b) *To the Second Year* of courses leading to the Bachelor of Arts degree:

Senior Matriculation—(1) Junior Matriculation or Mature Matriculation as prescribed above, and, in addition, (2) completion of first year, or attainment of the Ontario Secondary School Honour Graduation Diploma (Grade XIII), or an equivalent certificate, with required standing in the following five subjects:

1. English Composition and Literature.
2. A language other than English.
3. Mathematics (2 or 3 of Algebra, Geometry, Trigonometry) or an additional language.
4. A science: Biology or Chemistry or Physics.
5. One other, preferably History. (A student who does not offer History, will be required to include History 220 or 250 in the second or a subsequent year and, in addition, to include another of the subjects listed under Item 3 of the second-year requirements. See p. 52.)

See also p. 43, *Credit for Senior Matriculation courses*.

(c) *To the Third or subsequent years* of courses leading to the Bachelor of Arts degree:

Applications for admission to the third or subsequent years will be evaluated on their merits, and advanced standing granted for studies undertaken elsewhere only when these are recognized as the equivalent of subjects offered in Carleton College.

Every student will be required to complete at least his last five courses in Carleton College.

Course Requirements

- *Bachelor of Arts—Pass Course* (Offered in both day and evening divisions).

Length of course. Candidates for the Pass B.A. degree will take a total of twenty courses after Junior Matriculation, or fifteen after Senior Matriculation. See also *Course Load*, p. 43.

Course selection. The Pass B.A. course is designed to provide opportunity for a liberal education, including specialization in one subject of study, called a *major*. The choice of a major will normally be made upon entry to the third year, in consultation with the department or departments concerned. A *major* may be taken, with the consent of the department concerned, in any subject listed in Group A below. A *combined major* in two related subjects may be taken, with the consent of the departments concerned, provided that at least one of the subjects is chosen from Group A. The other may be chosen from Group B.

For 1956-57 subjects are classified as follows:

Group A—Biology (Botany, Zoology), Chemistry, Classics (Latin, Greek), Economics, English, French, German, Geology, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

Group B—Fine Arts, Geography, Russian, Spanish.

Courses will be selected from those listed under Details of Subjects, pp. 83 ff., as follows:

FIRST YEAR

1. English 110 and 120.
2. A language other than English (a course numbered between 100 and 199).¹
3. Two or three of Mathematics 110, 111, 112 or Mathematics 115 or one of French 110, German 115, Greek 115, Latin 110, Russian 51 or 110, Spanish 115. (Credit for a language course numbered between 50 and 99 is granted only after a further course in the language has been passed.)
4. A science: Biology 110 or Chemistry 110 or Physics 110.
5. History 110.

SECOND YEAR²

1. A course in English literature: English 210 or 220. (Students choosing English as a *major* will take English 220.)
2. An introduction to problems of thought and conduct: Philosophy 210 or 220.
3. An introduction to the study of contemporary society: One of Economics 210, History 220 or 250³, Political Science 210, Psychology 210, Sociology 210.
4. { Two of:
5. { (a) A language other than English (a course numbered between 200 and 299).
- (b) Mathematics 210.
- (c) A science, chosen from Biology, Chemistry, Geology, Physics (either a further course in a science already taken or a first course in another science).

THIRD AND FOURTH YEARS

A total of ten courses, five in each year: a minimum of four (five, if one is not taken in second year) in the student's major, the others to be chosen with the approval of the department in which the major is taken, or of the departments in the case of a combined major.

¹ See also p. 43, *Substitution for Prescribed Subjects*.

² In order to adjust the pattern of the second year to the needs of an individual student, one of the courses prescribed for second year may be postponed until the third year and another substituted for it in the second year.

³ A student who has entered second year by senior matriculation with the substitution of another subject for History must take History 220 or 250 in the second year and also one other of the subjects in this group. The latter may be postponed, however, until the third year.

Note: Students admitted to the B.A. course in or after 1952 will be governed by the above prescription of course selection. Those who were admitted to the course prior to 1952 are encouraged to transfer to the new curriculum if transfer is feasible, but have the option of continuing to be governed by the regulations stated at the time of their matriculation to the course.

Summer Reading Requirements.

Students taking the course programme leading to the B.A. are expected to fulfil summer reading requirements as announced.

Proficiency in English. See p. 48.

Standing. General regulations regarding standing are stated on p. 44. In addition, a candidate for the Pass B.A. degree must obtain a grade of "C" or better in at least half of the courses taken in Carleton College for the degree, and be recommended for graduation by his major department. If after the regular examinations in any year a student is below that standard, he is advised to raise his grades in some subjects by writing special supplemental examinations.

● *Bachelor of Arts with Honours*† (First two years offered in both day and evening divisions; last three years offered in day division only)

This course is characterized by strict prescription of studies and high standards of performance, more especially within those departments in which major and minor subjects have been selected.

Additional admission requirements. Admission to Honours will be granted only with the consent of the department in which the major subject is to be taken. Students who have attained at least second class standing in the work of the second year of the Pass Course may be admitted to the third year of an Honours Course. No student carrying a "condition" in the Pass Course will be admitted to an Honours Course.

Length of Course. Candidates for the degree B.A. with Honours will ordinarily take twenty-five courses in five years if admitted by Junior Matriculation, or twenty courses in four years if admitted by Senior Matriculation. Attendance at seminars and the completion of special assignments may also be required. See also *Course Load*, p. 43.

† *Bachelor of Arts with General Honours*

Bachelor of Arts with Specific Honours

Effective 1952 these two programmes were replaced by that leading to the degree of Bachelor of Arts with Honours, described above. Students admitted to General Honours or Specific Honours prior to 1952 will be governed by the regulations in effect at the time of their classification as honours students.

Course selection. A candidate for Honours, must, before registering in his third year, choose a major subject and a minor subject, and in these major and minor subjects must take such courses as may be determined by the head of the department in which he is to pursue the work of his major.

The whole course of a candidate for an Honours degree must be in the beginning discussed with, and thereafter at every stage be approved by, the head of the department in which the candidate chooses his major subject or field of study.

Honours majors are now available in Public Administration (see p. 69) Political Science, History, Economics, English and French. Other majors will be made available in subsequent years. A programme of Combined Honours may be arranged by permission of the Committee on Honours.

Students wishing to qualify for entry to the Ontario College of Education in the course leading to the High School Assistants' certificate, Type A, should consult the Registrar for information regarding appropriate course selection.

Proficiency in English. See p. 48.

Standing. General regulations regarding standing are stated on p. 44. Additional regulations regarding the standing of candidates for an Honours degree are as follows:

A student's honours standing in any year's work will be determined by the Committee on Honours.

To receive credit towards an Honours degree, a candidate must obtain at least second class standing on the year's work.

Students who fail to maintain honours standing in any year must withdraw from the Honours Course. Such students may apply for admission to the Pass Course.

At graduation a student's honours standing is determined, on the basis of his entire record, as First Class, High Second Class, or Second Class.

COMMERCE

● *Bachelor of Commerce* (Offered in both day and evening divisions)

The course leading to the degree of Bachelor of Commerce is designed primarily to provide an education with some specialization in subjects which should be of greatest interest and value to those looking forward to a business career. Because the aims of students differ widely, and because specific training can be gained more effectively in business itself than in academic courses, the Commerce course contains no specialized training in the techniques of business management and administration.

The course is based upon the conviction that a person who has learned to think and to express himself clearly and coherently has received the best preparation for responsible citizenship and business leadership in the modern world. The objective of the Commerce course is, therefore, to provide the maximum opportunity for rigorous, critical and imaginative thinking by the student under the guidance and direction of the members of the Faculty.

Admission Requirements

(a) *To the First Year* of the course leading to the Bachelor of Commerce degree:

Requirements are the same as those for admission to the first year of courses leading to the Bachelor of Arts degree (see p. 50).

(b) *To the Second Year* of the course leading to the Bachelor of Commerce degree:

Senior Matriculation—(1) Junior Matriculation or Mature Matriculation as prescribed above (on p. 50) and, in addition, (2) completion of first year, or attainment of the Ontario Secondary School Honor Graduation Diploma (Grade XIII) or an equivalent certificate with required standing in the following five subjects:

1. English Composition and Literature
2. A modern language other than English
3. Mathematics (Algebra, Geometry and Trigonometry)
4. A science: Biology or Chemistry or Physics
5. One other, preferably History.

See also p. 43, *Credit for Senior Matriculation Subjects*.

(c) *To the Third and Fourth Years* of the course leading to the Bachelor of Commerce degree:

Applications for admission to the third or fourth years will be evaluated on their merits, and advanced standing granted for studies undertaken elsewhere only when these are recognized as the equivalent of subjects offered in Carleton College.

Every student will be required to complete at least his last five courses in Carleton College.

Course Requirements

Length of course. Candidates for the Bachelor of Commerce degree must take a total of $20\frac{1}{2}$ courses after Junior Matriculation or $15\frac{1}{2}$ after Senior Matriculation. See also *Course Load*, p. 43.

Course selection. Courses will be selected from those listed under Details of Subjects, pp. 83 ff., as follows:

FIRST YEAR

1. English 110 and 120
2. French 110 or a course numbered between 100 and 199 in another modern language¹
3. Mathematics 110, 111 and 112 or Mathematics 115
4. A science: Biology 110 or Chemistry 110 or Physics 110
5. History 110

SECOND YEAR

1. English 210 } Both must be taken }
or Philosophy 210 or 220. } before graduation. }
2. A further course in the modern language taken in first year or a science: Biology, Chemistry, Geology, or Physics
3. Economics 210
4. Commercial Law 210 or Political Science 210 (Commercial Law 210 must be taken before graduation)
5. Accounting 210
6. Mathematics 220 (half course)

THIRD YEAR

1. Economics 310
2. Economics 315
3. Economics 320
4. Accounting 310
5. A course in English, History, Philosophy, Political Science, Psychology, or Sociology

¹ See also p. 43, *Substitution for Prescribed Subjects*.

FOURTH YEAR

Five full courses chosen as follows:

1. One of: Economics 365, 370, 375
2. One or two of: History, Philosophy, Political Science, Sociology
3. Two or three of: Accounting, Commercial Law 210, Economics, Geography, Mathematics, Psychology, Public Law. (Under certain circumstances, courses in other fields may be taken with permission of the Committee on Commerce Studies.)

Commerce students wishing to discuss their programmes of studies should consult the Chairman of the Committee on Commerce Studies, who is their faculty advisor.

Students who, after achieving the B.Com. degree, intend to proceed to professional accounting degrees—Chartered Accountant (C.A.), Certified Public Accountant (C.P.A.), Certified General Accountant (C.G.A.), or Registered Industrial and Cost Accountant (R.I.A.)—should consult the head of the Accounting Department before entering the final year of the Commerce course. Any other students who are interested in professional accounting careers are referred to the special circular covering the various accounting degree-granting bodies. These students also may wish to consult the head of the Accounting Department.

Proficiency in English. See p. 48.

Summer Reading Requirements

Students taking the course programme leading to the B.Com. are expected to fulfil summer reading requirements.

Standing. General regulations regarding standing are stated on p. 44. In addition, a candidate for the B.Com. degree must obtain a grade of "C" or better in at least half of the courses taken in Carleton College for the degree, and be recommended for graduation by the Committee on Commerce Studies. If after the regular examinations in any year a student is below that standard, he is advised to raise his grades in some subjects by writing special supplemental examinations.

ENGINEERING

● *Certificate in Engineering* (Offered in day division only)

Studies offered in Applied Science and Engineering cover the first two years of a four-year Engineering course, and require Senior Matriculation or the equivalent for admission. The first year course is common to all branches of engineering. The second year is divided into two groups: Course A is for students intending to specialize in Civil, Mechanical or Electrical Engineering; Course B is for students intending to specialize in Chemistry, Chemical Engineering, Mining, Metallurgy, or Geology.

Students completing the Engineering course at Carleton College may, if recommended, be admitted to the third year of Engineering courses at another university, e.g., McGill University, Queen's University or (in certain courses) The University of Toronto, where they may qualify in two additional years for a degree in Engineering.

Alternatively, students completing the Engineering course at Carleton College may transfer to the course leading to the degree of Bachelor of Science with Honours in Applied Physics, which involves two additional years of study in Carleton College. (See p. 78).

Admission Requirements

(a) *To the First Year* of the course leading to the Certificate in Engineering:

Junior Matriculation—Junior matriculation requirements are the same as those for admission to the first year of courses leading to the Bachelor of Arts degree (see p. 50).

Senior Matriculation—In addition, a candidate for admission to the first year of the course leading to the Certificate in Engineering must have passed the examinations of the first year of the Bachelor of Science course in Carleton College (see p. 75), or of Ontario Grade XIII or the equivalent examinations of other recognized examining bodies in the following subjects:

1. English Composition and Literature
2. Mathematics (Algebra, Geometry, including Analytic Geometry, and Trigonometry). (Preference will be given to students having second class standing or better.)
3. Physics
4. Chemistry
5. One of: Latin, Greek, French, German, Spanish, Italian, History, Biology (Botany and Zoology)
(Students intending to proceed to The University of Toronto in the Faculty of Applied Science and Engineering should choose a language.)

(b) *To the Second Year* of the course leading to the Certificate in Engineering:

Students who have successfully completed the work of first year Engineering in Carleton College, or equivalent work elsewhere, may apply for admission to the second year.

Course Requirements

Length of Course. Candidates for the Certificate in Engineering will take a course covering two years of study after Senior Matriculation or after the first year of the B.Sc. course.

Course selection. Courses will be selected from those listed under Details of Subjects, pp. 83 ff., as follows:

FIRST YEAR

Common to all branches of Engineering

SUBJECT	Lecture Hours Per Week		Laboratory Hours Per Week	
	First Term	Second Term	First Term	Second Term
Chemistry 210 (Qualitative Analysis and Elementary Physical Chemistry).....	3	3	3	3
Engineering 210 (Mechanics).....	2	2	2	2
Engineering 220 (Mechanical Drawing I)....	1	1	5	5
Engineering 230 (Surveying I)	1	1	*	3
Engineering 235 (Surveying Field Work)....	(Four weeks, April-May)			
English 230 (English for Engineering Students).....	2	2	0	0
Mathematics 210 (Calculus).....	3	3	0	0
Mathematics 240 (Geometry and Spherical Trigonometry).....	3	0	0	0
Mathematics 245 (Algebra).....	0	3	0	0
Physics 210 (General Physics).....	3	3	3	3
	18	18	13	16

*Three days' field work at the commencement of the term.

SECOND YEAR—COURSE A
Civil, Mechanical and Electrical Engineering

SUBJECT	Lecture Hours Per Week		Laboratory Hours Per Week	
	First Term	Second Term	First Term	Second Term
Chemistry 315 (Chemistry of Engineering Materials).....	2	2	0	0
Economics 210.....	2	2	—	—
Engineering 310 (Applied Science).....	2	2	2	2
Engineering 320 (Mechanical Drawing II)..	0	0	3	3
Engineering 330 (Surveying & Mapping II)	1	1	3	0
Engineering 350 (Descriptive Geometry)....	0	0	2	2
Engineering 360 (Materials of Engineering)	1	2	0	0
Engineering 370 (Mechanics of Machines)..	2	0	1	0
Engineering 380 (Heat Engines, Elementary).....	1	2	0	0
English 235 (Public Speaking for Engineering Students).....	0	0	0	1
Geology 210 (General Geology).....	2	2	2	2
Mathematics 310 (Differential and Integral Calculus).....	3	3	0	0
Physics 305 (Electricity).....	3	3	3	3
	19	19	16	13

SECOND YEAR—COURSE B

(See p. 62)

Standing. The standing in each course is graded as I (first class standing, 80-100%), II (second class standing, 65-79%), III (third class standing, 50-64%) or "F" (failure, below 50%). To receive credit toward the Certificate in Engineering, a candidate must obtain at least third class standing in the work of each course.

Regulations regarding Failure in Engineering. An Engineering student who fails a number of subjects, including the more important

subjects, may be deemed to have failed his year, and denied the privilege of writing supplemental examinations. He may apply to the Committee on Admission and Studies for permission to repeat the year, on probation.

A first-year Engineering student who fails some subjects and is permitted to write supplemental examinations may not enter the second year if, after the supplemental examinations, he is still conditioned in more than one full course (or two half-courses), or if he is conditioned in any course which is prerequisite to one of the courses in second year.

If a student fails both the regular and supplemental examinations in a subject, he must repeat that or an equivalent course before taking another examination in it.

Special Requirements

All Engineering students should consult the calendar of the particular university in which they desire to continue their studies in the third and fourth years.

Summer school. Students proceeding to third year Engineering at another university will be required to attend the appropriate summer school prior to entry to the third year.

Practical experience. It is necessary that Engineering students shall have practical experience in engineering work (experience which may be obtained in summer jobs) and they must submit a record of this signed by their employers. Suitable forms are available from the Registrar's Office.

Summer essays. Summer essays on topics drawn from the practical experience of the student during his summer work must be submitted at the beginning of the fall term.

Summer reading. Students must do prescribed reading during the summer months and be prepared to submit to an oral test on the books read, immediately following entry into second year, on dates to be announced early in September.

SECOND YEAR—COURSE B

Chemical, Mining, Metallurgy, Geology

SUBJECT	Lecture Hours Per Week		Laboratory Hours Per Week	
	First Term	Second Term	First Term	Second Term
Chemistry 330 (Quantitative Analysis)	2	2	6	6
Economics 210.....	2	2	—	—
Engineering 310 (Applied Mechanics).....	2	2	0	2
Engineering 320 (Mechanical Drawing II)	0	0	0	3
*Engineering 330 (Surveying, Mapping II)	1	1	3	0
Engineering 350 (Descriptive Geometry) ..	0	0	2	2
Engineering 360 (Materials of Engineering)	1	2	0	0
*Geology 210 (General Geology).....	2	2	2	2
*Geology 320 (Mineralogy).....	2	2	2	2
Mathematics 310 (Differential and Integral Calculus).....	3	3	0	0
*Physics 306 (Elementary Electricity).....	3	0	3	0
	18	16	18	17

*Students intending to go to McGill University for degrees in Chemical Engineering or Metallurgy will take Chemistry 320 (3 hours lectures, 3 hours laboratory per week both terms), substitute Physics 305, (3 hours lectures, 3 hours laboratory per week both terms) for Physics 306, and will omit Geology 210, Geology 320, and Engineering 330.

JOURNALISM

Director of the Department:

WILFRID EGGLESTON, M.B.E., B.A., F.A.G.S.

ADVISORY COUNCIL

T. J. Allard, Executive Vice-President, *Canadian Association of Radio and Television Broadcasters*.

Clyde Blackburn, Ottawa Chief of Bureau, *The Canadian Press*.

Grant Dexter, Associate Editor, *The Winnipeg Free Press*.

Guy de Merlis, French Editor, *The Labour Gazette*.

D'Arcy Finn, Executive Editor, *The Ottawa Citizen*.

Blair Fraser, Ottawa Editor, *Maclean's Magazine*.

Michael Hind-Smith, Producer CBOT.

Norman M. MacLeod, Director, *The British United Press*.

Dan C. McArthur, *Canadian Broadcasting Corporation*.

Robert McKeown, Staff writer, *Weekend Picture Magazine*.

I. Norman Smith, Associate Editor, *The Ottawa Journal*.

C. T. Bissell, President of the College.

Wilfrid Eggleston, Director of the Department.

James A. Gibson, Dean, Faculty of Arts and Science.

J. A. B. McLeish, Registrar of the College.

- *Bachelor of Journalism* (First two years offered in both day and evening divisions; last two years offered in day division only)

The course in Journalism at Carleton College has been built on the conviction that what today's journalist needs most of all is a first-rate education, supplemented by thorough training in the basic skills of investigation and communication. The value of the journalism course arises largely from its intimate integration with the college studies in the liberal arts. The modern journalist is called upon to report and comment upon the whole range of social, political, economic and cultural activities of his time. Before he can even ask intelligent questions about such matters, he must be grounded in the humanities and the social sciences. Nor can he know too much about a wide range of other fields of enterprise and learning.

The reporter is the link or bridge between the world of activity and investigation, and the great masses of readers and listeners. To be effective he must, therefore, master some of the fundamental arts of seeing, digging, interviewing, reading, organizing, reporting, and editing. Adequately equipped, he can readily apply his capacity to any field of journalistic activity. The good newspaperman is noted for his ability to lay hold of information, and to see the value of the facts and opinions he acquires.

The course in Journalism at Carleton College thus emphasizes liberal scholarship and basic skills, in the belief that there are few practical applications of a specialized nature which cannot be subsequently acquired in a few weeks of actual work. While an array of "shop" courses in practical vocational training might appear to give more immediately useful crafts to the prospective journalist, it is assumed that no amount of "shop" training will carry a "cub" far if he lacks a broad background of liberal education and the intelligence to grasp and report the complex phenomena of modern society.

The opportunities in the national capital for the training of newspapermen and women are exceptional. The members of the parliamentary press gallery and staffs of the Ottawa newspapers, the press attachés of diplomatic missions, top executives in the radio broadcasting field, the public relations officers of government departments, and headquarters personnel of national associations are among the resources from which Carleton College can draw for guest lecturers and teaching material. Ottawa is the repository and headquarters of information upon almost every conceivable national and international topic. It is rich in cultural life. It is not going too far to say that residence for two or three years in the national capital can of itself be an education to anyone who purposes to make writing his or her career.

Admission Requirements

(a) *To the First Year* of the course leading to the Bachelor of Journalism degree:

Requirements are the same as those for admission to the first year of courses leading to the Bachelor of Arts degree (see p. 50).

(b) *To the Second Year* of the course leading to the Bachelor of Journalism degree:

Senior Matriculation—(1) Junior Matriculation or Mature Matriculation as prescribed above (on p. 50) and in addition, (2) completion of first year, or attainment of the Ontario Secondary School Honour Graduation Diploma (Grade XIII) or an equivalent certificate with required standing in the following five subjects:

1. English Composition and Literature.
2. A language other than English.
3. Mathematics (2 or 3 of Algebra, Geometry, Trigonometry) or Latin.
4. A science: Biology or Chemistry or Physics.
5. One other, preferably History.

See also p. 43, *Credit for Senior Matriculation Subjects*.

(c) *To the Third and Fourth Years* of the course leading to the Bachelor of Journalism degree:

Undergraduates applying for admission to advanced standing with allowances on credits gained at their original college or university may be admitted to the third or fourth year, if their academic record is accepted as at least equivalent to the completion of second or third year Journalism in Carleton College. Normally, such applicants should offer standing in at least two of the following subjects in their previous work: Canadian History, Psychology, Economics, Political Science. Credit for courses previously taken will be arranged on application, subject to the stipulation that a minimum of a full year's work of at least the last five courses must be taken at Carleton College in order to qualify for the Bachelor of Journalism degree.

(d) *To the B.J. Course as a post-graduate year:*

The holder of a bachelor's or master's degree in Arts, Science or Commerce may be permitted to enroll in the five Journalism subjects normally taught in the third and fourth years (Journalism 310, 320, 330, 340, 350), and thus qualify for the degree Bachelor of Journalism in one academic year. He may be required to take, in addition, certain of the courses in the liberal arts which are prescribed for undergraduates in Journalism, if the pattern of his previous studies is deficient in such background.

NOTE: Journalism students are urged to become reasonably proficient on the typewriter as soon as possible. All assignments in the courses Journalism 310, 320, 330, 340 and 350 (which are taken in the third and fourth years) will be done by typewriter.

Course Requirements

Length of Course. Candidates for the Bachelor of Journalism degree must take a total of twenty courses in four years if admitted by Junior Matriculation, or fifteen courses in three years if admitted by Senior Matriculation. See also *Course Load*, p. 43.

Course Selection. The course leading to the degree of Bachelor of Journalism will consist of subjects selected from those listed under Details of Subjects, pp. 83 ff., as follows:

FIRST YEAR

1. English 110 (English Composition) *and* English 120 (Introduction to College Literature)
2. French 110 (Introduction to French Literature) *or* a course numbered between 100 and 199 in another language¹
3. Mathematics 115.
or Latin 110 (First-year Latin)
4. A science: Biology 110 (General Biology) *or* Chemistry 110 (General Chemistry) *or* Physics 110 (Basic Physics)
5. History 110 (Main Directions in Modern History).

SECOND YEAR

1. English 210 (English Authors from Chaucer to T. S. Eliot)
2. A further course in the language taken in first year
3. History 230 (North America in the Colonial Period)²
4. Philosophy 210 or 220 (Introduction to Philosophy—which must be taken in third year if not in second)
or Psychology 210 (General Psychology)
5. Economics 210 (Principles of Economics)
or Political Science 210 (Introduction to Political Science)
or Sociology 210 (Introduction to Sociology and Anthropology)
6. Journalism 210 (Preparatory Lectures for Second-year Journalism Students)—a non-credit course.

THIRD YEAR

1. Journalism 310 (Introduction to Journalism)
2. Journalism 320 (Fundamentals of Reporting)
3. History 330 (Canada from 1791)²
4. An approved option³ (Philosophy 210 or 220, if not already taken)
5. An approved option³.

FOURTH YEAR

1. Journalism 330 (Editing)
2. Journalism 340 (Interpretative Reporting)
3. Journalism 350 (Career Seminar in Journalism)
4. An approved option³.
5. An approved option³.

¹ See also p. 43, *Substitution for Prescribed Subjects*.

² A student who comes to the College from another country may be advised to take a different sequence in History.

³ The subjects which will be recommended to students for their choice of options will be drawn from the following: Political Science, Economics, Sociology, Philosophy, Canadian Geography, History, English, Social Psychology, French.

Proficiency in English. See p. 48.

Standing. General regulations regarding standing are stated on p. 44. In addition, a candidate for the B.J. degree must obtain a grade of "C" or better in at least half of the courses taken in Carleton College for the degree, *including* Journalism 330, 340 and 350, and be recommended for graduation by the Department of Journalism. If after the regular examinations in any year a student is below that standard, he is advised to raise his grades in some subjects by writing special supplemental examinations.

SCHOOL OF PUBLIC ADMINISTRATION

Director of the School: R. OLIVER MACFARLANE, M.A., Ph.D.

ADVISORY COUNCIL

- O. E. Ault, Director of Planning and Development, Civil Service Commission of Canada
C. H. Bland, formerly Chairman, Civil Service Commission of Canada
R. B. Bryce, Clerk of the Privy Council, and Secretary to the Cabinet
G. F. Davidson, Deputy Minister of Welfare
H. L. Trueman, Director, Foreign Agricultural Relations, Department of Agriculture, Canada
C. D. Wight, Vice-President, Mount Royal Paving and Supply and Ottawa Pre-Mixed Concrete Limited
E. F. Sheffield, Director, Education Division, Dominion Bureau of Statistics

C. T. Bissell, President of the College
R. Oliver MacFarlane, Director of the School
Donald C. Rowat, Associate Professor of Political Science
James A. Gibson, Dean, Faculty of Arts and Science
J. A. B. McLeish, Registrar of the College
Pauline Jewett, Assistant Professor of Political Science

THE PROGRAMME

The rapid growth in government services during the last half century has increased the responsibilities and complicated the problems of public employees. The realization has been growing, therefore, that public administrators, whether federal, provincial or municipal, can profit from a special type of education. Carleton College has been attempting to meet this need by offering programmes of study as preparation for public administration.

Assisted by a \$200,000 grant from The Atkinson Charitable Foundation, the School of Public Administration was established September 1, 1953, to coordinate the various programmes of study and to promote further development and research in the field. Four programmes are now offered: the first leads to a Bachelor of Arts degree with Honours in Public Administration; the second to an undergraduate Certificate in Public Service Studies; the third to a graduate Diploma in Public Administration; and the fourth to the degree of Master of Arts in Public Administration.

The Honours B.A. programme is planned on the assumption that the most suitable education for a person desiring to be a capable public administrator is broad and general in base, with specialization at a later stage. While it is designed to be of particular use to students contem-

plating careers in public employment, it also provides a sound general education for those considering the legal profession or business.

The Certificate and Diploma programmes, on the other hand, will be most helpful to those who desire training in fields directly related to public administration. The Certificate course is designed to encourage public servants without university training to broaden their background. Since they are allowed degree credit for this work, they will also be encouraged, upon its completion, to continue toward a bachelor's degree. The graduate Diploma course, requiring more advanced studies, is available both to public servants in the evening division and to full-time day students. The M.A. programme is normally offered to full time students, but may be taken by part time students, subject to conditions set forth on page 73. Several fellowships and scholarships are available for M.A. candidates, and for both full- and part-time candidates enrolling for the graduate Diploma, and for full-time study toward the Certificate.

Public employees not interested in registering for studies leading to a degree, a certificate or a diploma should note that they may take, as *special* students, any of the subjects listed in Public Administration programmes for which they have the requisite background. Their attention is directed also to non-credit extension courses related to public administration which are offered from time to time by the College. Details may be obtained from the Registrar.

As Carleton College is located in the capital city and enjoys close relations with many government agencies, students of public administration may profit greatly from the unique advantages thus offered. Such institutions as the Library of Parliament, the Public Archives, the Dominion Bureau of Statistics, and the specialized libraries of the several government departments, all offer unusual opportunities for study in Ottawa. Advice and assistance are obtained from the Civil Service Commission and from officials of other government departments and agencies. Experienced public administrators give lectures or lead seminar discussions from time to time.

UNDERGRADUATE COURSES

- *Bachelor of Arts with Honours in Public Administration* (First two years offered in both day and evening divisions; last three years offered in day division only)

Course Requirements

Candidates for the degree of Bachelor of Arts with Honours in Public Administration must satisfy all requirements for the degree of B.A. with Honours. (see p. 53).

Course selection. The work of this course involves prescribed studies in Political Science, History, Economics and Public Law, and in approved options, as follows:

FIRST AND SECOND YEARS

Students intending to enter Honours Public Administration in the third year will take the courses prescribed for the Pass B.A. in the first and second years (see p. 51). They are advised, however, to include Political Science 210 (Introduction to Political Science) in the second year, and by the end of that year they should have a reading knowledge of French.

THIRD YEAR

1. Political Science 310 (Comparative Government)
2. Economics 210 (Principles)
3. History 330 (Canada from 1791)
4. Political Science 340 (Introduction to Public Administration)
5. An approved option

FOURTH YEAR

1. Political Science 360 (History of Political Thought)
2. Political Science 320 (Canadian Federalism)
3. Public Law 310 (Elements)
4. Economics 310 (Money and Banking)
or Economics 315 (Economic History)
or Economics 360 (Economic Development of Canada)
or Economics 320 (Statistics)
5. An approved option

FIFTH YEAR

1. Political Science 365 (Modern Political Thought)
2. Political Science 325 (Government of Canada—Problems)
3. Political Science 390 (Research Tutorial)
4. Economics 350 (Economic Policy of Canada)
or Psychology 340 (Personnel Psychology I)
or Psychology 345 (Personnel Psychology II)
or Sociology 366 (Sociology of Work)
5. An approved option

- *Certificate in Public Service Studies* (Offered in both day and evening divisions.)

This course is designed primarily for public employees who seek special training in public service subjects at the undergraduate level.

Subjects taken for the Certificate may be credited toward a bachelor's degree, but a student must complete at least five of the subjects required for the degree *after* the award of the Certificate. Candidates for the Certificate, full-time, are invited to inquire about possible financial aid.

Admission Requirements

Junior matriculation (see p. 50); but the cases of experienced applicants without junior matriculation will be considered on their merits and the completion of certain subjects at Carleton may be required before admission. Candidates may be admitted with advanced standing, but must complete at least five courses for the Certificate in Carleton College.

Course Requirements

The following courses are required and the following order is suggested. See also p. 43, *Course Load*.

1. Political Science 210 (Introduction to Political Science)
2. Economics 210 (Principles of Economics)
3. History 330 (Canada from 1791)
or History 360 (The Economic Development of Canada)
4. Political Science 340 (Introduction to Public Administration)
5. Political Science 320 (Canadian Federalism)
or Political Science 350 (Provincial and Municipal Government)
or Public Law 310 (Elements)
6. One other, chosen in consultation with the Director according to the needs of the student

Standing. A candidate must obtain a grade of "C" or better in at least half of the courses taken in Carleton College for the Certificate.

DISCONTINUED PROGRAMMES:

These programmes are no longer offered to beginning students:

Bachelor of Public Administration

Bachelor of Arts with Certificate in Public Administration

GRADUATE COURSES

- *Graduate Diploma in Public Administration* (Offered in both day and evening divisions)

This course is designed for those in or planning to enter the public service who already have a university degree, but desire further training in the fields directly related to public administration.

Admission Requirements

A bachelor's degree from a recognized college or university, including (with better than average standing) the following undergraduate courses, or their equivalents:

- a. Political Science 210 (Introduction to Political Science)
- b. Economics 210 (Principles of Economics)
- c. History 330 or 360 (Canadian History)
- d. Two other courses approved by the Director, in the social sciences or related fields. Experience in public service may be accepted in lieu of *one* of these two courses.

An applicant who lacks one or more of these prerequisite courses may make up his course deficiencies in the College. In exceptional cases, certain of the prerequisites may be waived.

Course Requirements

Five courses are required: (See also p. 43, *Course Load*).

1. Political Science 340 (Introduction to Public Administration)
2. Political Science 360 or 365 (Political Thought)
3. Political Science 325 (Government of Canada—Problems)
or Political Science 350 (Provincial and Municipal Government)
4. Public Law 310 (Elements)
or Public Law 510 (Administrative)
or Political Science 320 (Canadian Federalism)
or Economics 350 (Economic Policy of Canada)
5. An approved social science

All five courses for the Diploma must be taken in Carleton College. If a student has already taken any of these courses (or their equivalents) in

qualifying for admission to the Diploma programme, he must substitute other courses approved by the Director.

Standing. Candidates for the Diploma must obtain an average of at least second class standing in the courses counted for the Diploma, with no grade below "C".

- *Master of Arts in Public Administration*

This programme is normally offered in Day Division only, but it may be taken in Evening Division with the approval of the Director under the following conditions:

1. Admission under a or b (below).
2. Passing a comprehensive examination prior to the conferring of a degree.
3. Completing all requirements in a period not exceeding five years.
4. Having previously completed in B.A. or Diploma programme at least one year in Residence.

Admission Requirements

- a. A bachelor's degree, *and* the graduate Diploma in Public Administration with "B" or better grades in at least half the courses;
or
- b. A bachelor's degree in any honours course (requiring four years from senior matriculation) with second-class honours or better, and including a minimum of 10 courses in social science with at least one in each of: Canadian History, Economic Principles, Political Theory, Public Administration.
or
- c. A bachelor's degree in any honours course requiring four years from Senior Matriculation with second-class honours or better. If standing has not been obtained in Canadian History, Economic Principles, Political Theory, Public Administration, these courses must be taken in the Day or Evening Division prior to undertaking the course requirements listed below. This programme would normally require two years in Evening Division and one year in Day Division.

Course Requirements

1. Political Science 540 (Theory and Practice of Administration)

2. Public Law 510 (Administrative). (This course must be elected if not previously taken.)
or Economics 350 (Economic Policy of Canada)
 3. Political Science 325 (Government of Canada—Problems)
or Political Science 350 (Provincial and Municipal Government)
 4. Political Science 590 (Directed Study in a Selected Field)
 5. and An approved social science
- } or a Thesis

Standing. A grade of "B" or better must be obtained in each course counted for the M.A. degree.

SCIENCE

Admission Requirements

(a) *To the First Year* of courses leading to the Bachelor of Science degree:

Requirements are the same as those for admission to the first year of courses leading to the Bachelor of Arts degree (see p. 50).

(b) *To the Second Year* of courses leading to the Bachelor of Science degree:

Senior Matriculation—(1) Junior Matriculation or Mature Matriculation as prescribed above (on p. 50) and, in addition, (2) completion of first year, or attainment of the Ontario Secondary School Honour Graduation Diploma (Grade XIII) or an equivalent certificate with required standing in the following five subjects:

1. English Composition and Literature
2. A language other than English
3. Mathematics (Algebra, Geometry and Trigonometry)
4. } Two of: Physics, Chemistry, Biology
5. }

See also p. 43, *Credit for Senior Matriculation Subjects*.

(c) *To the Third or subsequent years* of courses leading to the Bachelor of Science degree:

Applications for admission to the third or subsequent years will be evaluated on their merits and advanced standing granted for studies undertaken elsewhere only when these are recognized as the equivalent of subjects offered in Carleton College.

Every student will be required to complete at least his last five courses in Carleton College.

Course Requirements

- *Bachelor of Science — Pass Course* (Offered in both day and evening divisions)

Length of course. Candidates for the Pass B.Sc. degree will take a total of twenty courses after Junior Matriculation, or fifteen after Senior Matriculation. See also *Course Load*, p. 43.

Course selection. The Pass B.Sc. course affords opportunity to specialize in one science subject, called a *major*, and to a lesser extent in a second subject, called a *minor*. The choice of a major normally will be made upon entry to the third year, in consultation with the department concerned.

In several departments, some of the more advanced courses will normally be given, in whole or in part, in the day division only. Evening division candidates may therefore have to arrange to take one or two of their major courses in the daytime. Candidates are advised to consult their major departments as early as possible to arrange their programs.

For 1956-57, subjects in which majors may be taken are: Biology (Botany, Zoology), Chemistry, Mathematics, Geology, Physics.

Courses will be selected from those listed under Details of Subjects, pp. 83 ff., as follows:

FIRST YEAR

1. English 110 and 120
2. A language other than English (a course numbered between 100 and 199)¹
3. Mathematics 110, 111 and 112
4. {
5. { Two of: Biology 110, Chemistry 110, Physics 110

SECOND YEAR

1. One of: Classical Civilization 275, English 210, Philosophy 210 or 220
2. Mathematics 210
3. { Three of:
4. { (a) Biology 110 or Botany 210 or Zoology 210 or 220
5. { (b) Chemistry 110 or 210
- (c) Geology 210
- (d) Physics 110 or 210

THIRD AND FOURTH YEARS

A total of ten courses, five in each year: normally at least four more courses in the student's major, at least two in a minor field, and at least one course each year chosen from subjects other than the natural sciences and mathematics. The programme of each student in the third and fourth years is under the direct supervision of a full-time member of the department in which he takes his major.

Language requirement. Before graduation the candidate for the B.Sc. degree will be required to show that he has a reading knowledge of French or German (preferably both).

Note: Students admitted to the B.Sc. course in or after 1952 will be governed by the above prescription of course selection. Those who entered the course prior to 1952 are encouraged to transfer to the new curriculum if transfer is feasible, but have the option of

¹ See also p. 43, *Substitution for Prescribed Subjects*.

continuing to be governed by the regulations stated at the time of their matriculation to the course.

Proficiency in English. See p. 48.

Standing. General regulations regarding standing are stated on p. 44. In addition, a candidate for the Pass B.Sc. degree must obtain a grade of "C" or better in at least half of the courses taken in Carleton College for the degree, and be recommended for graduation by his major department. If after the regular examinations in any year a student is below that standard, he is advised to raise his grades in some subjects by writing special supplemental examinations.

- *Bachelor of Science with Honours*† (First two years offered in both day and evening divisions; last three years in day division only)

The Honours Course is characterized by strict prescription of studies and high standards of performance, more especially in those departments in which major and minor subjects have been selected.

Additional admission requirements. Admission to Honours will be granted only with the consent of the department in which the major subject is to be taken. Students who have attained at least second class standing in the second year of the Pass Course may be admitted to the third year of an Honours Course. No student carrying a "condition" in the Pass Course will be admitted to an Honours Course.

Length of Course. Candidates for the degree of B.Sc. with Honours will ordinarily take twenty-five courses in five years if admitted by Junior Matriculation, or twenty courses in four years if admitted by Senior Matriculation. Attendance at seminars and the completion of special assignments may also be required. See also *Course Load*, p. 43.

Course selection. A candidate for Honours must, before registering in his third year, choose a major subject and a minor subject. and in these major and minor subjects must take such courses as may be determined by the head of the department in which he is to pursue the work of his major.

The whole course of a candidate for an Honours degree must be in the beginning discussed with, and thereafter at every stage be approved by, the head of the department in which the candidate chooses his major subject or field of study.

Honours majors are now available in Biology, Chemistry, Mathematics, Physics, and Applied Physics (see below). Other majors will be

† *Bachelor of Science with Specific Honours*

Effective 1952 this programme was replaced by that leading to the degree of Bachelor of Science with Honours, described above. Students admitted to Specific Honours prior to 1952 will be governed by the regulations in effect at the time of their classification as honours students.

made available in subsequent years. A programme of Combined Honours may be arranged by permission of the Committee on Honours.

Students wishing to qualify for entry to the Ontario College of Education in the course leading to the High School Assistants' Certificate, Type A, should consult the Registrar for information regarding appropriate course selection.

Language requirement. Before graduation each candidate for the degree of B.Sc. with Honours will be required to satisfy his major department that he has a reading knowledge of one or more suitable languages other than English.

Proficiency in English. See p. 48.

Standing. General regulations regarding standing are stated on p. 44. Additional regulations regarding the standing of candidates for an Honours degree are as follows:

A student's honours standing in any year's work will be determined by the Committee on Honours.

To receive credit towards an Honours degree, a candidate must obtain at least second class standing on the year's work.

Students who fail to maintain honours standing in any year must withdraw from the Honours Course. Such students may apply for admission to the Pass Course.

At graduation a student's honours standing is determined, on the basis of his entire record, as First Class, High Second Class, or Second Class.

● *Bachelor of Science with Honours in Applied Physics* (Offered in day division only)

The course leading to the degree of Bachelor of Science with Honours in Applied Physics is designed to serve students whose interest is in engineering research.

Special admission requirements. Admission to this course is open to students who have qualified in the two-year certificate course in Engineering (see p. 58) or the equivalent, with at least second class standing.

Length of course. Candidates for this degree will take a minimum of ten courses in two years following completion of the two-year course in Engineering (making a total of five years from Junior Matriculation or four years from Senior Matriculation). See also *Course Load*, p. 43.

Course selection. Courses will be selected in consultation with the chairman of the Physics department.

Proficiency in English. See p. 48.

Standing. The regulations regarding standing in courses leading to the degree of Bachelor of Science with Honours apply. (See above).

PRE-PROFESSIONAL COURSES

Students who plan to undertake further professional training after completion of their studies in Carleton College are invited to consult the Registrar for aid in selection of their courses.

Among the fields for which preparatory courses may be planned at Carleton are:

Graduate Studies in	Law	Accounting
Arts and Science	Theology	Architecture
Public Administration	Teaching	Engineering
Medicine	Library Science	Forestry
Dentistry	Social Work	Pharmacy
		Surveying (D.L.S.)

Special arrangements have been made for studies at Carleton in preparation for the examinations of the Society of Industrial and Cost Accountants of Ontario, and the Chartered Institute of Secretaries of Joint Stock Companies and other Public Bodies, and for entry to the Ontario College of Education.

Details of Subjects

(The course numbering pattern is explained on p. 18)

ACCOUNTING

Professor; Chairman of the Department, 1956-57 . . . W. J. McDougall, B.A., C.A.
Sessional Lecturers Harry Wood, C.A.
A. A. Sterns, Lic.com., Dr. rer. pol.

Students who, after achieving the B.Com. degree, intend to proceed to professional accounting degrees—Chartered Accountant (C.A.), Certified Public Accountant (C.P.A.), Certified General Accountant (C.G.A.), or Registered Industrial and Cost Accountant (R.I.A.)—should consult the head of the Accounting Department before entering the final year of the Commerce course.

ACCOUNTING 210. [2]. *Elementary Accounting*

The theory and practice of accounts, including the purposes of the double entry analysis of transactions; the establishment of financial classifications through the medium of books of original entry and the ledgers; the preparation of periodic financial statements and a study of the accounting entries required for that purpose; an introduction to the concepts of costs and of revenues and to the problems of effecting a periodic matching thereof in the accounts; partnership and corporation accounting.

Day Division: 1956-57 (lectures two hours a week; occasional problem periods).

Evening Division: Annually (lectures two hours a week; occasional problem periods).

Professor McDougall

ACCOUNTING 310. [3, 100]. *Intermediate Accounting*

The theory and practice of accounts with special attention to the corporate form of business organization; problems of valuation and classification, principles of account analysis; assets, liabilities, capital stock, surplus and reserves; preparation of statements; comparative statements and ratio analysis.

PREREQUISITE: Accounting 210.

Day Division: 1956-57 (lectures two hours a week; occasional problem periods).

Evening Division: Annually (lectures 2½ hours a week).

Professor McDougall
and a member of the Department

ACCOUNTING 320. [4, 101]. *Advanced Accounting*

A course designed to provide further study in accounting theory and in specialized accounting problems, including those involved in consolidated statements; the use of accounting data in managerial control, including the utility of a financial budget; an introduction to the field of auditing, including the objectives and responsibilities of both the internal and external auditor.

PREREQUISITE: Accounting 310.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures two hours a week).

Professor McDougall

ACCOUNTING 345. [7]. *Cost Accounting*

The field of cost accounting, including a study of the elements of costs; analysis of types of costs; distribution of cost elements to units of production in job cost systems and process cost systems; standard costs and analysis of cost variances.

PREREQUISITE: Accounting 310.

Evening Division: Annually (lectures two hours a week, occasional problem periods).

Dr. Sterns

ACCOUNTING 380. [5, 102]. *Government Accounting and Finance*

A study of the financial administration and organization of the Canadian Government, including the preparation, legalization and execution of the budget; the authorization and collection of revenues; government borrowing and public debt; parliamentary appropriations; the disbursement of public monies; the audit of the public accounts; the financial functions of Parliament; the Committees of Supply and Ways and Means; the Governor in Council; the Treasury Board; the Receiver General and Minister of Finance; the Department of Finance and the Comptroller of the Treasury; the Bank of Canada; the Auditor General; and the Public Accounts Committee. The course will include some reference to the financial administrative practices of other countries.

PREREQUISITE: Accounting 210.

Not offered 1956-57 (but see Extension Course).

Discontinued Course

Last Offered

ACCOUNTING 340. [6]. *Cost Accounting and Auditing* 1951-52

ANTHROPOLOGY

(See Sociology)

ASTRONOMY

Sessional Lecturer P. M. Millman, A.M., Ph.D.

ASTRONOMY 210. [1]. *Descriptive Astronomy*

A general survey course dealing with the modern concepts of distance, the sizes and the physical nature of the heavenly bodies, including the sun, planets, satellites, comets, meteors, stars, and the diffuse matter of space. Opportunity will be given for astronomical observation at the Dominion Observatory.

TEXT: Baker, *Astronomy* (Van Nostrand, 5th edition).

PREREQUISITES: Mathematics 110, 111, 112, and Physics 110 (which may be taken concurrently).

Not offered 1956-57.

BIOLOGY

Professor; Chairman of the Department, 1956-57

H. H. J. Nesbitt, M.A., Ph.D., D.Sc., F.R.E.S., F.E.S.A., F.Z.S.

Assistant Professor (Botany) W. I. Illman, B.A., M.Sc.

Assistant Professor (Biology) and Curator of the Museum E. A. O. Turnau, M.Sc.

Sessional Lecturers Isabel L. Bayly, B.Sc., M.A.,

L. B. Smith, B.Sc., M.S.A.

As Carleton College is located within easy access of the Canadian national collections of botany, entomology and zoology, it is advantageously placed for teaching the life sciences, and particularly the taxonomic aspects of this field.

PASS COURSE

Students who are reading for a pass degree in Arts or Science and who wish to major in Biology are advised to take Botany 210 and Zoology 210 and 220 before attempting more advanced courses.

HONOURS COURSES

Candidates who intend to read for a degree with honours in the biological sciences may follow any one of the three course patterns outlined below. (For information regarding preparation for admission to the Ontario College of Education for the Interim High School Assistants' certificate, Type A, students are invited to consult the Registrar.)

A. *B.Sc. with Honours in General Biology*

Basic requirements—The first and second years of the pass science course, preferably including in the second year: Botany 210 or Zoology 210 or 220, Chemistry 210, Physics 210.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in the second year:

1. At least nine courses in Biology, including: Botany 210 and two others in Botany; Zoology 210 and 220; Botany 350 *or* Zoology 350; Biology 310, 350, 375.
2. Chemistry 210 and two additional courses in Chemistry.
3. Physics 210.
4. A course in English, one in Philosophy, and one other non-science, non-mathematics course.
5. Others chosen in consultation with the Department.

B. *B.Sc. with Honours in Botany or Zoology*

Basic requirements—As for Pattern A above.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in second year:

1. At least nine courses in Biology, with a preponderance in either Botany or Zoology.
2. {
3. { As for Pattern A above.
4. {
5. {

C. *B.Sc. with Honours in General Science for Experimental Biologists*

Basic requirements—As for Pattern A above.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in the second year:

1. At least eight courses in Biology, including: Botany 210 and two others in Botany; Zoology 210 and 220; Botany 350 *or* Zoology 350; Biology 310 and 375.
2. Chemistry 210, 310 and 320; Chemistry 340 *or* Biology 350.
3. Physics 210 and two additional courses in Physics.
4. A course in English, one in Philosophy, and two others of the non-science, non-mathematics courses.

BIOLOGY 110. [1]. *General Biology*

A course designed to illustrate the fundamental principles governing life (both plant and animal), the development of organisms and the relationship of man to the world about him. This course is primarily intended for persons who do *not* intend to take another science subject.

TEXT: MacDougall and Hegner, *Biology the Science of Life* (McGraw Hill).

REFERENCE TEXTS: Hegner, *College Zoology* (Macmillan).

Gibbs, *Botany* (McGraw Hill).

Day Division: Annually (lectures three hours a week, laboratory three hours a week).

Evening Division: Not offered 1956-57.

Professors Nesbitt and Turnau

BIOLOGY 310. [5]. *Genetics and Cytogenetics*

A lecture and demonstration course designed to illustrate the principles of genetics and the physical bases of chromosomal inheritance.

TEXTS: Sinnott, Dunn and Dobzhansky, *Principles of Genetics* (McGraw-Hill).
Srb and Owen, *General Genetics* (Freeman)

REFERENCE TEXTS: Riley, *Genetics and Cytogenetics* (Wiley).
Sharp, *Fundamentals of Cytology* (McGraw-Hill).
Darlington, *Recent Advances in Cytology* (Blakiston).
Goldschmidt, *Physiological Genetics* (McGraw-Hill).
Gates, *Human Genetics* (Macmillan).
Advances in Genetics (Academic Press).

PREREQUISITE: Biology 110.

Day Division: 1956-57 (seminar two hours a week, additional hours arranged).

Evening Division: 1956-57 (seminar two hours a week, additional hours arranged).
Professor Illman

BIOLOGY 320. [16]. *Principles of Microscopic Investigation of Biological Materials*

The theory and practice of resolving microscopic structures of plant and animal material; of vital examination, of fixation and staining, and special methods of microscopy and photomicrography.

REFERENCE TEXTS: Chamberlain, *Methods in Plant Histology* (University of Chicago Press).
Johansen, *Plant Microtechnique* (McGraw-Hill).
Lee, *Microtome's Vade-mecum* (Saunders).
Sass, *Elements of Botanical Microtechnique* (McGraw-Hill).

PREREQUISITES: Botany 210, Zoology 210 and 220. (Zoology 210 or 220 may be taken concurrently, or by permission of the Department.)

Day Division: Not offered, 1956-57.

BIOLOGY 330. [15]. *General Microbiology*

The general principles and practice of microbiology. Consideration will be given to the biologic, economic, ecologic and industrial importance and to the metabolic processes and the taxonomy of autotrophic, saprobic, and parasitic bacteria, yeasts, moulds and actinomycetes.

TEXT: To be announced.

PREREQUISITE: Botany 210 or Zoology 210 or Grade XIII Biology (or, with permission, Biology 110).

Not offered 1956-57.

BIOLOGY 350. [17a]. *Biochemistry*

(Offered in the Department of Chemistry as Chemistry 375).

BIOLOGY 375.[20]. *History of Biology*

A seminar course in the history of biology and biological theory.

REFERENCE TEXTS: Nordenskiöld, *The History of Biology* (Knopf).
 Shull, *Evolution* (McGraw-Hill).
 Woodger, *Biological Principles* (Keegan-Paul).
 Bertalanffy and Woodger, *Modern Theories of Development* (Oxford).
 Darwin, *Origin of Species*.
 Sullivan, *The Limitations of Science* (New American Library).

PREREQUISITES: Biology 310, 350; Botany 210, 310; Zoology 210, 220; and Zoology 350 or Botany 350.

Not offered 1956-57.

Discontinued Course

Last Offered

BIOLOGY 11. *General Biology* 1948-49

Botany

BOTANY 210.[1, Biology 12]. *General Botany and Ecology*

Consideration of general principles of plant life will be followed by a study of plant form and function as related to the environment. Extensive readings in plant ecology and geography will be required.

TEXT: Gibbs, *Botany* (McGraw-Hill).

REFERENCE TEXTS: Braun-Blanquet, *Plant Sociology* (McGraw-Hill).
 Cain, *Foundations of Plant Geography* (Harper).
 Lyon & Buchman, *The Nature and Properties of Soil* (Macmillan).
 Raunkiaer, *The Life Form of Plants and Plant Geography*.
 Russell, *Soil Conditions and Plant Growth* (Longmans, Green).
 Schimper, *Plant Geography*.
 Trewartha, *An Introduction to Weather and Climate* (McGraw-Hill).

Day Division: 1956-57 (lectures three hours a week, laboratory four hours a week).

Evening Division: Not offered 1956-57.

Professors Turnau and Illman

BOTANY 310.[2]. *Comparative Anatomy*

BOTANY 315.[2]. *Comparative Morphology and Evolution of Telomous Plants*

Half courses designed to provide a comprehensive, integral approach to a knowledge of the vascular plants, past and present.

REFERENCE TEXTS: Bower, *The Ferns* (Cambridge).
 —, *Primitive Land Plants* (Cambridge).
 Chamberlain, *Gymnosperms, Structure and Evolution* (U. of Chicago Press).
 —, *Living Cycads* (U. of Chicago Press).
 Seward, *Plant Life through the Ages* (Cambridge).
 Eames and MacDaniels, *Introduction to Plant Anatomy* (McGraw-Hill).
 Esau, *Plant Anatomy* (Wiley)

PREREQUISITES: Botany 210 and Zoology 210 or 220. (Zoology 210 or 220 may be taken concurrently).

Not offered 1956-57.

BOTANY 320.[6]. *Taxonomy of the Flowering Plants*

A general survey of the flowering plants, comparison of various systems of classification, history of taxonomy; an assigned project; collection of local flora.

TEXT: Lawrence, *Taxonomy of Vascular Plants* (Macmillan)

PREREQUISITE: Botany 210.

Day Division: 1956-57 (lectures two hours a week, laboratory four hours a week).

Professor Turnau

BOTANY 324. *Field Taxonomy*

Though this course will be primarily concerned with field taxonomy and related laboratory work, there will be seminars on selected groups and lectures on groups of particular interest locally. Ecological associations will be considered. Collections will be made. (Half course.)

PREREQUISITE: Botany 320.

Not offered 1956-57.

BOTANY 328. *Project in Taxonomy*

A seminar and reading course, including the preparation of a paper on an assigned project. (Half course.)

PREREQUISITE: Botany 320, Botany 324 to be taken concurrently.

Not offered 1956-57.

BOTANY 330.[3]. *Morphology, Reproduction and Evolution of the Algae and of the Fungi*

PREREQUISITES: Botany 210 and Zoology 210 or 220. (Zoology 210 or 220 may be taken concurrently).

Day Division: 1956-57 (lectures two hours a week, laboratory four hours a week).

Professor Illman

BOTANY 350.[4b]. *Plant Physiology*

The fundamental principles of vegetable physiology; water relations, respiration, growth, morphogenesis and photosynthesis. (Half course.)

PREREQUISITE: Botany 210. (Biology 350 shall be taken concurrently.)

Not offered 1956-57.

BOTANY 370.[5]. *Mycology*

A course devoted to the morphology, reproduction, taxonomy and evolution of the fungi.

TEXT: To be announced.

PREREQUISITE: Botany 210.

Not offered 1956-57.

Zoology

ZOOLOGY 210. [1, Biology 3]. *General Zoology, Pt. I*

A course devoted to a study of the comparative anatomy, taxonomy, development, evolution and ecology of invertebrate animals.

TEXT: Borradaile, Eastham, Potts and Saunders, *The Invertebrata* (Cambridge),

REFERENCE TEXTS: Brown, *Selected Invertebrate Types* (Wiley).

Parker & Haswell, *Text-book of Zoology*, Vol. I (Macmillan).

Cambridge Natural History, appropriate volumes.

Bullough, *Practical Invertebrate Anatomy* (Macmillan).

PREREQUISITE: Grade XIII Zoology useful but not necessary.

Day Division: 1956-57 (lectures three hours a week, laboratory four hours a week).

Professor Nesbitt

ZOOLOGY 220. [2, Biology 2]. *General Zoology, Pt. II*

A course devoted to a study of the comparative anatomy, development and evolution of vertebrate (chordate) animals. Special attention is paid to the study of mammalian anatomy.

TEXT: Weichert, *Anatomy of the Chordates* (McGraw-Hill)

REFERENCE TEXTS: Parker and Haswell, *Text-book of Zoology*, Vol. II (Macmillan).

deBeer, *Vertebrate Zoology* (Sidgwick and Jackson).

Hyman, *Comparative Vertebrate Anatomy* (Chicago).

Moog, *Structure and Development of the Vertebrates* (Prentice-Hall).

Craigie, *Bensley's Practical Anatomy of the Rabbit* (U. of Toronto Press).

PREREQUISITE: Grade XIII Zoology useful but not necessary.

Day Division: 1957-58 and alternate years (lectures two hours a week, laboratory four hours a week).

ZOOLOGY 310. [3, Biology 6]. *Introduction to Arthropods*

A study of the comparative anatomy, taxonomy, development, evolution and economic importance of the animals included in the Phylum Arthropoda.

TEXT: Snodgrass, *Textbook of Arthropod Anatomy* (Comstock).

REFERENCE TEXTS: Carter, *A General Zoology of the Invertebrates* (Sidgwick and Jackson).

Grassé, *Traité de Zoologie* (appropriate volumes) (Masson).
Parker and Haswell, *Textbook of Zoology*, Vol. 1 (Macmillan).

Savory, *The Arachnida* (Ed. Arnold).

Smith, Woods, et al., *Cambridge Natural History*, Vol. IV (Macmillan).

PREREQUISITES: Zoology 210 and 220.

Not offered 1956-57.

ZOOLOGY 350. [4b, Biology 4]. *Animal Physiology*

A study of the fundamental principles of animal physiology. (Half course).

REFERENCE TEXTS: Zoethout and Tuttle, *Textbook of Physiology* (Mosby).
Best and Taylor, *The Living Body* (Holt).
Sheer, *Comparative Physiology* (Wiley).

PREREQUISITES: Zoology 210 and 220. (Biology 350 shall be taken concurrently.)
Not offered 1956-57.

ZOOLOGY 360. [5, Biology 7]. *Entomology*

A course on the morphology and physiology of representatives of the more important orders and families of insects.

REFERENCE TEXTS: Snodgrass, *Principles of Insect-Morphology* (McGraw-Hill).
Wigglesworth, *Insect Physiology* (Methuen).

PREREQUISITES: Zoology 210, 220 and 310.

Day Division: 1956-57 (lectures two hours a week, laboratory four hours a week).

Professor Nesbitt

ZOOLOGY 375. [6]. *Insect Taxonomy and Ecology*

A course devoted to an intensive study of the classification of insects.

REFERENCE TEXTS: Comstock, *Introduction to Entomology* (Comstock).
Imms, *Entomology* (Methuen).
Grassé, *Traité de Zoologie* (Vol. IX, *Insects*) (Masson).
and others.

PREREQUISITES: Zoology 210, 220, 310, 360. (Zoology 360 might be taken concurrently).

Not offered 1956-57.

ZOOLOGY 380. [7]. *Taxonomy and Ecology of the Vertebrates.*

A course devoted to a study of the taxonomy and geographic distribution of the major classes of vertebrates.

PREREQUISITES: Zoology 210 and 220.

Not offered 1956-57.

ZOOLOGY 385. *Principles of Systematic Zoology*

A course devoted to an intensive study of the principles and methods of animal classification.

PREREQUISITE: Permission of the Department.

Day Division: 1956-57 (lectures and discussion hours arranged).

Professor Nesbitt

ZOOLOGY 390. *Acarology*

An advanced course devoted to an intensive study and classification of the Acari (mites).

PREREQUISITE: Permission of the Department.

Not offered 1956-57.

BOTANY

(See Biology)

CHEMISTRY

Associate Professor;

Chairman of the Department, 1956-57 . . . J. M. Morton, M.Sc., A.M., Ph.D.

Associate Professor . . . J. M. Holmes, B.Sc., M.A., Ph.D.

Assistant Professor . . . P. M. Laughton, B.A., M.Sc., Ph.D.

Lecturer . . . Allan G. Forman, B.A.Sc.

The fact that Carleton College is located in Ottawa makes available certain facilities for the study of chemistry which are unique in Canada. The laboratories of the National Research Council for both pure and applied chemistry, the laboratories of the Bureau of Mines, and several other government laboratories where important work in chemistry is going on, are located in Ottawa. Students in chemistry have the opportunity of visiting these laboratories and to some extent have access to the libraries associated with them. There are frequent lectures in Ottawa by visiting scientists, open to staff and students of the College.

PASS COURSE

A pass-course student majoring in Chemistry is advised to take Chemistry 110 and 210 before entry to the third year. It is also recommended that Physics 210 be taken in second year and Physics 305 in third year. At least four Chemistry courses beyond Chemistry 210 are required, including Chemistry 310 and 320 in the third year and 330 in the fourth.

HONOURS COURSES

Candidates for the B.Sc. degree with honours in chemistry may do their research project in physical chemistry, inorganic chemistry, or organic chemistry. Students wishing to prepare for admission to the Ontario College of Education for the Interim High School Assistants' Certificate, Type A, must follow one of the following course patterns:

A. *Chemistry with Physics Minor*

Basic requirements—The first and second years of the pass science course, preferably including in the second year: Chemistry 210 and Physics 210.

Honours requirements—At least 16 courses beyond the second year, including the following:

1. At least eight courses in Chemistry, including Chemistry 210, 310, 320, 330, 350, 360 or 370, and 390.
2. Mathematics 310 and one other in Mathematics.
3. Physics 210, 305 and one other in Physics.
4. Two additional science courses *or* one in science and one in Mathematics.
5. Three additional non-science, non-Mathematics courses, including one in a language other than English.

B. *Chemistry with Biology Minor*

Basic requirements—The first and second years of the pass science course, preferably including in the second year: Chemistry 210 and one of Botany 210, Zoology 210, Zoology 220.

Honours requirements—At least 16 courses beyond the second year, including the following:

1. At least eight courses in Chemistry, including Chemistry 210, 310, 320, 330, 340, 370, 390.
2. Three courses in Biology, ordinarily Botany 210, Zoology 210 and 220.
3. Physics 210 and 305.

4. Mathematics 310.
5. One additional course in science or Mathematics.
6. Three additional non-science, non-Mathematics courses, including one in a language other than English.

Each candidate for honours in Chemistry is required to solve a research problem and write a thesis. This is done in the final year and is listed below as Chemistry 390. Four typewritten copies of this thesis are to be deposited with the Chemistry Department not later than March 31st of the final year. One copy may be returned to the candidate.

CHEMISTRY 110.[1]. *General Chemistry*

An introductory course emphasizing the fundamental laws and principles of chemistry. The more important metals and non-metals and their compounds are studied with reference to their importance in Canadian industry.

TEXTS: Ritter, *An Introduction to Chemistry* (J. Wiley, 1955).

Malm and Frantz, *College Chemistry in the Laboratory* (W. H. Freeman and Co., 1954).

Day Division: Annually (lectures three hours a week, laboratory three hours a week).

Mr. Forman

CHEMISTRY 210.[6]. *Qualitative Analysis and Elementary Physical Chemistry*

First Term: The ideal gas law, liquids, solids, heterogeneous equilibrium, kinetics, thermochemistry, thermodynamics, electrochemistry and colloids. The laboratory work will include experiments in elementary physical chemistry and quantitative determinations.

Second Term: Atomic structure, electronic theory of valence, oxidation and reduction, chemical equilibrium as applied to solutions of ionized substances and complex ions, the theory of qualitative separations. The laboratory work will include practice in the separation of common cations.

TEXTS: Cragg and Graham, *An Introduction to the Principles of Chemistry* (Clarke Irwin, 1954).

Sorum, *Semimicro Qualitative Analysis* (Prentice-Hall, 2nd Edition, 1953).

PREREQUISITES: Chemistry 110 and Mathematics 110 and 112.

Day Division: Annually (lectures three hours a week, laboratory three hours a week).

Professors Morton and Holmes

CHEMISTRY 310.[8] *Physical Chemistry*

An introduction to the principles of physical chemistry, including such topics as: kinetic theory of gases, liquids and solids, thermodynamics and thermochemistry, properties of solutions from kinetic theory and thermodynamic point of view, equilibrium in homogeneous and heterogeneous systems with applications of thermodynamics, electrochemistry and surface phenomena. Laboratory work and solutions of problems on each section form an important part of this course.

TEXTS: Daniels, *Outline of Physical Chemistry* (J. Wiley, 1955).

Daniels, Matthews and Williams, *Experimental Physical Chemistry* (McGraw-Hill, 4th edition, 1949).

PREREQUISITES: Chemistry 210 and Mathematics 210.

Day Division: Annually (lectures three hours a week, problems one hour a week, laboratory three hours a week).

Professor Holmes

CHEMISTRY 315.[5]. *Chemistry of Engineering Materials*

A course for second year Engineering students. It deals with the materials of engineering, water treatment, corrosion, organic compounds, fuel, rubber, plastics and explosives.

TEXT: Gyngell, *Applied Chemistry for Engineers*, 2nd edition (Edward Arnold & Co.).

PREREQUISITE: Chemistry 210.

Day Division: Annually, for second-year Engineering students only (lectures two hours a week).

Professors Morton and Laughton

CHEMISTRY 320.[2]. *Organic Chemistry*

An introductory course in organic chemistry, consisting of a survey of the chemistry of aliphatic and simple aromatic compounds. Emphasis is placed on the more general theoretical principles concerning structure and reactivity. The laboratory work provides practice in preparations, reactions, and detection of the more common functional groups.

TEXTS: Brewster, *Organic Chemistry* (Prentice-Hall, 2nd Edition, 1953).

or Fieser and Fieser, *Organic Chemistry* (D. C. Heath, 1950), which is recommended for students majoring in Chemistry.

Coleman, Wauzonek and Buckles, *Laboratory Manual of Organic Chemistry* (Prentice Hall, 1949).

PREREQUISITE: Chemistry 110.

Day Division: Annually (lectures three hours a week, laboratory three hours a week).

Evening Division: 1957-58 (lectures three hours a week, laboratory three hours a week).

Professor Laughton

CHEMISTRY 330.[7]. *Quantitative Analysis*

A course in quantitative analysis covering the fundamental methods of volumetric and gravimetric analysis.

TEXTS: Hamilton and Simpson, *Talbot's Quantitative Analysis* (Macmillan, 10th Edition, 1954).

PREREQUISITE: Chemistry 210.

Day Division: Annually (lectures two hours a week, laboratory six hours a week).

Evening Division: 1956-57 (lectures two hours a week, laboratory six hours a week).

Professor Morton and Mr. Forman

CHEMISTRY 340.[4]. *Intermediate Organic Chemistry*

The lecture work consists of a survey of alicyclic, polynuclear aromatic and heterocyclic chemistry, with emphasis on methods of structure proof and synthesis, and the application of the electronic theory to problems of structure and reactivity. The laboratory work on preparative techniques, and qualitative identification of organic compounds singly and in mixtures, is accompanied by paper problems of the same kind.

TEXTS: Fieser and Fieser, *Organic Chemistry* (D. C. Heath, 1950).

Shriner and Fuson, *Identification of Organic Compounds* (Wiley, 1946).

PREREQUISITE: Chemistry 320.

Evening Division: 1956-57 (lectures three hours a week, laboratory three hours a week).

N.B.: Day Division students will take the evening lectures and do the laboratory work by day, Tuesday afternoons.

Professor Laughton

CHEMISTRY 350.[10]. *Advanced Physical Chemistry*

Selected topics in physical chemistry, including kinetics of chemical reactions, phase rule and phase equilibria, further discussions of electrochemistry and surface chemistry, elementary quantum theory and thermodynamics. Laboratory work will include selected, more advanced experiments with emphasis on glass blowing and high vacuum techniques.

TEXT: Moore, *Physical Chemistry* (Prentice-Hall, 1955).

REFERENCE TEXT: Glasstone, *Textbook of Physical Chemistry* (Van Nostrand, 1948) and such texts in kinetics, phase rule, electrochemistry and thermodynamics as may be assigned from time to time.

PREREQUISITE: Chemistry 310, and permission of the instructor.

Day Division: Annually (lectures three hours a week, problems one hour a week, laboratory three hours a week).

Professor Holmes

CHEMISTRY 360.[11]. *Advanced Inorganic Chemistry*

The structure of the atom, the electronic theory of valence, structures of complex inorganic compounds, metal amines, the properties of the elements in relation to their positions in the periodic table, radioactivity, isotopes, radiochemistry and the use of isotopic tracers. The laboratory work includes the preparation of a number of complex inorganic compounds, colloidal dispersions and the carrying out of some unusual reactions.

TEXT: Glasstone, *Sourcebook on Atomic Energy* (Van Nostrand, 1950).

REFERENCE TEXTS: Emelius and Anderson, *Modern Aspects of Inorganic Chemistry* (Routledge and Kegan Paul, 1952).

Moeller, *Inorganic Chemistry, An Advanced Textbook* (John Wiley and Sons, 1952).

PREREQUISITE: Chemistry 310, and permission of the instructor.

Day Division: 1956-57 (lectures three hours a week, laboratory three hours a week).

Professor Morton

CHEMISTRY 370.[12]. *Advanced Organic Chemistry*

Selected topics such as electronic theories of structure, the mechanisms of organic reactions, stereochemistry, and the chemistry of more complex naturally occurring substances. Students will be required to demonstrate a capacity for interpreting and criticizing the original literature.

TEXT: To be announced.

PREREQUISITE: Chemistry 340, and permission of the instructor.

Day Division: 1956-57 (lectures three hours a week, laboratory three hours a week).

Professor Laughton

CHEMISTRY 375.[9]. *Biochemistry*

A survey course in plant and animal biological chemistry arranged in conjunction with the Biology Department and available only to advanced students. (This course is listed also as Biology 350.)

PREREQUISITE: Permission of the Department.

Day Division: Not offered 1956-57.

CHEMISTRY 390.[13]. *Research Project and Seminar*

Senior students in honours chemistry will do a research project under the direction of one of the members of the Department.

A seminar will be conducted at which advanced students will present reports on recent progress in selected fields of chemistry, and from time to time experts in certain fields from outside the College will be invited to speak. The attendance at such a seminar or similar meetings at the National Research Council is intended to bring the student into close contact with specific problems in current research.

Day Division: Annually (laboratory hours arranged, seminar periods usually two hours a fortnight).

Professors Morton, Holmes, and Laughton

CHEMISTRY 590. *Graduate Research*

Day Division: By arrangement.

Professors Morton, Holmes and Laughton

CLASSICS

Assistant Professor;

Chairman of the Department, 1956-57 . . . F. Ellenor M. Swallow, M.A., Ph.D.
Sessional Lecturer J. C. Forster, B.A.

Students may elect Latin, or Greek, or a combination of the two as their major field of study in a Pass course; or students who are reading for honours in another discipline may elect either Latin or Greek as a minor.

A full departmental listing of courses is available in the offices of the Dean, the Registrar, and the department of Classics, and interested students are invited to discuss possible courses or programmes with the departmental chairman.

GREEK 110. [1]. *Language and Reading*

Review of grammar and syntax; composition. *Reading:* Xenophon, *Cyropaedia*.

PREREQUISITE: Former course Greek 51 or the equivalent.

Day Division: 1956-57 (lectures three hours a week).

Lecturer to be announced

GREEK 115. *Introduction to Language and Reading*

A beginning course to introduce students not only to grammar and syntax, but also to the reading of continuous prose. (Equivalent of former Greek 51 and Greek 110; one full credit).

Day Division: 1956-57 (lectures and practice periods five hours a week).

Professor Swallow

GREEK 210. [2]. *Literature and Reading*

Study of the forms and development of Greek literature. *Reading:* Euripides, one play; Lysias, select orations. (If there are students in the class intending to go on in Theology, some time will be given to the reading of selected passages from the Gospels).

PREREQUISITE: Greek 110 or the equivalent.

Day Division: 1956-57 (lectures three hours a week).

Lecturer to be announced

Latin

LATIN 110. [1]. *Language and Reading*

Review of grammar and syntax; composition. *Reading:* Cicero, *Ninth Philippic*, *Pro Archia*; Ovid, *Fasti III*.

PREREQUISITE: Former Course Latin 51 or the equivalent.

Day Division: 1956-57 (lectures three hours a week).

Professor Swallow

LATIN 210. [2] *Literature and Reading*

Study of the history of Latin literature. *Reading:* Virgil, *Eclogues*, *Aeneid VIII*; Livy, one book.

PREREQUISITE: Latin 110 or the equivalent.

Day Division: 1956-57 (lectures three hours a week).

Professor Swallow

LATIN 315. *Letters in Literature*

Discussion of the letter in Latin literature, as a private utterance, as a literary form, and as source material for historical study. *Reading:* Letters of Cicero and of Pliny, with some selection from others.

PREREQUISITE: Latin 210.

Day Division: 1956-57 (tutorial hours arranged).

Professor Swallow

Classical Civilization

CLASSICAL CIVILIZATION 275. [1]. *Greece and Rome in the Ancient World*

The history of classical Greece with attention to the development of her characteristic institutions; the growth and expansion of Rome, and her organization, during the Republic and the Principate. Selections from the literatures of the two peoples will be read (in English) to illustrate their cultural history and their characteristic ways of thought. (This course is also listed as History 275).

Evening Division: 1956-57 (lectures two hours a week).

Professor Swallow

CLASSICAL CIVILIZATION 305. *Classics of the Western Tradition*

Reading, in English translations, of passages from *The Iliad* and *The Odyssey*, Agamemnon, Oedipus Rex, Hypolytus, Phaedra, (Seneca) Phedre; *The Aeneid*; *The Divine Comdy*. This course is also listed as English 305).

PREREQUISITE: Permission of the department.

Day Division: 1956-57 (seminar one hour a week *both terms*).

Professors Wood and Swallow

COMMERCE

(This listing discontinued after 1951-52)

<i>Renumbered Courses</i>	<i>New number</i>
COMMERCE 1. <i>Commercial Law</i>	COMMERCIAL LAW 210
COMMERCE 2. <i>Business Finance</i>	ECONOMICS 330
COMMERCE 4. <i>Labour Economics and Industrial Relations</i> . .	ECONOMICS 335

<i>Discontinued Courses</i>	<i>Last offered</i>
COMMERCE 3b. <i>Business Policies</i>	1950-51
COMMERCE 5. <i>Marketing</i>	1951-52
COMMERCE 6. <i>Business Problems</i>	1948-49

COMMERCIAL LAW

Sessional Lecturer M. E. Corlett, B.A.

COMMERCIAL LAW 210. [COMMERCE 1]. *Commercial Law*

The law of contract and agency, sale of goods, negotiable instruments, partnerships and companies, bankruptcy and insolvency, bills of sale and chattel mortgages.

Day Division: Not offered 1956-57.

Evening Division: Annually (lectures three hours a week).

Mr. Corlett

ECONOMICS

<i>Associate Professor; (on leave of absence, 1956-57)</i>	H. S. Gordon, A.M.
<i>Assistant Professor</i>	H. E. English, B.A.
<i>Assistant Professor; Chairman of the Department 1956-57</i>	T. N. Brewis, M.Com., Ph.D.
<i>Visiting Lecturer</i>	Lawrence M. Read, B.A., A.M.
<i>Sessional Lecturers</i>	G. S. Watts, M.A.
	W. R. Dymond, M.A., Ph.D.
	Virginia Sawyer, M.A., M.B.A.
	George W. Wilson, B. Com., M.A., Ph.D.

PASS COURSE

Students who intend to major in Economics should take Economics 210 in their second year. At least four additional courses in Economics will be required during the two subsequent years, and the choice of courses for each year must be approved by the Chairman of the Economics Department.

Students who wish to major (or to take honours) in Economics will be expected to fulfill the summer reading requirements.

HONOUR COURSES

Economics. A candidate for honours in Economics will be required to spend five years from junior matriculation and should signify his intention of applying for honours before commencing his third year. He should take Economics 210 during the second year.

The honours requirements consist of extensive work in Economics with a minor in allied social sciences. The student's programme for the third and subsequent years will be planned in consultation with the Chairman of the Department of Economics.

Combined Honours in Economics and Political Science: Students intending to take this course should take Economics 210 or Political Science 210 (or preferably both) in the second year. The choice of courses in subsequent years will be subject to the approval of the chairmen of the two departments. The honours requirements include at least six courses in Economics and six courses in Political Science. These will be arranged so that the student may transfer either to full honours in Economics or to full honours in Political Science at the end of the fourth year, if he then wishes to specialise more intensively.

ECONOMICS 210. [2]. *Principles of Economics*

The course contains four sections: First, the basic ingredients of the economy—resources and wants; second, the organization of the economy and the basic allocation process by which resources are directed to the satisfaction of various human wants; third, the determination of a nation's income, and the associated problems of unemployment and inflation; and finally, international economics and its relationship to a peaceful world.

Day Division: Annually (lectures two hours a week, group discussion one hour a week). Two sections: one exclusively for Engineering students.

Evening Division: Annually (lectures two hours a week). Also Summer 1957 (lectures five hours a week).

Professor Brewis and Mr. Read; and Dr. Wilson

ECONOMICS 310.[8, 103]. *Money and Banking*

The theory and practice of banking and finance, with specific reference to the purposes and functions of the country's important financial institutions. Attention will be paid to the role of money and finance in the production and distribution of the national income and in the problems of inflation and unemployment. Relevant problems of international trade and foreign exchange will also be introduced.

PREREQUISITE: Economics 210.

Day Division: Annually (lectures two hours a week).

Evening Division: 1957-58 and alternate years (lectures two hours a week).

Mr. Read

ECONOMICS 315.[10, 105]. *Economic History*

This course treats the development of economic institutions, especially since the Middle Ages, and stresses an examination of those aspects of history which may be used to explain the character of the principal economic institutions and practices of the present day.

PREREQUISITE: Economics 210, or the permission of the instructor.

Day Division: Annually (lectures two hours a week).

Evening Division: 1957-58 and alternate years (lectures two hours a week).

Professor English

ECONOMICS 320.[16]. *Statistical Methods in the Social Sciences*

An introductory course dealing with the use of statistical methods in economics and the other social sciences. The principal statistical measurements will be studied. The use of statistical analysis as a method for the precise and reliable acquisition of knowledge will be stressed. The misuse of statistical information will be examined. A critical approach to statistical methods will be maintained throughout the course. (This course will yield a half credit only, if Mathematics 230 has been taken for credit) (This course is listed also as Sociology 355).

PREREQUISITE: Mathematics 115, and one of Economics 210, Political Science 210, Psychology 210 or Sociology 210; or the permission of the Department.

Day Division: Annually (lectures two hours a week; problem work).

Mrs. Sawyer

ECONOMICS 330.[Commerce 2]. *Business Economics*

Business practices in pricing, advertising and the marketing of goods are examined in the light of economic theory. Consideration is given also to the costs of distribution in the economy as a whole and to the influence of government in the maintenance of competition. The second part of the course is concerned with the financing of business enterprise, the function of the capital market and the significance of the supply of finance for economic stability and development.

PREREQUISITE: Economics 210.

Not offered 1956-57.

ECONOMICS 335.[Commerce 4]. *Labour Economics and Industrial Relations*

An examination of the position of the labourer in the Canadian economy and of the economic and sociological theory related to this study. The place and function of the Government in the relationship between management and labour. Trade unions—their aims and history. Collective bargaining—its purpose and meaning to industry and to labour.

PREREQUISITE: Economics 210.

Evening Division: 1956-57 (lectures two hours a week).

ECONOMICS 340.[7, 102]. *International Trade*

It is the aim of this course to provide the student with a wide working basis. The first half of the course deals with the mechanics of international trade, the foreign exchange market, bills of exchange, the balance of payments, tariffs, foreign exchange control, etc. Attention is then turned to the theory of international trade, from the more primitive concepts down to the recent analytical structures. Throughout the balance of the course some attention will be given to special studies of topical interest. But the primary aim is to put to practical use the knowledge of the mechanics and theoretical tools of international trade gained earlier in the course, through an interpretation of several phases of Canadian economic history relating to the international field.

PREREQUISITE: Economics 210.

Not offered 1956-57.

ECONOMICS 345.[11, 106]. *Public Finance and Fiscal Policy*

The course deals with the place of public expenditures and revenue in the national economy, the theory of taxation and the relation of fiscal policy to other aspects of economic policy. The changing economic role of the state and the relationship between the Federal and Provincial Governments are examined. Some consideration is given to the subject of taxation at the Provincial level.

PREREQUISITE: Economics 210.

Evening Division: 1956-57 (lectures two hours a week).

Professor Brewis

ECONOMICS 350.[12, 107]. *Economic Policy of Canada*

Consideration will be given to some of the major features of Canadian economic policy both in the domestic and international field, and these features will be reviewed in the light of economic theory. Political, ideological and administrative aspects of economic policy will be discussed, and the problems involved in attempting to reconcile divergent considerations will be shown. Participation by visiting lecturers is anticipated.

PREREQUISITE: Economics 210.

Evening Division: 1956-57 (lectures two hours a week).

Professor Brewis

ECONOMICS 360.[3]. *The Economic Development of Canada*

(Offered in the Department of History as History 360).

ECONOMICS 365.[9]. *Modern Economic Theory*

The first part of the course will deal with the theories of consumption, production, and exchange. The second part will deal with the theory of income and its distribution. Questions relating to the stability and growth of aggregate income will be discussed.

PREREQUISITE Economics 210 and one other course in Economics.

Day Division: 1956-57 (lectures two hours a week).

Evening Division: 1956-57 (lectures two hours a week).

Professor English

ECONOMICS 370.[15]. *Economic and Social Thought in the Nineteenth Century*

The principal developments in social and economic thought from the beginning of the Industrial Revolution to the end of the Victorian era. The important social and economic theorists and the influential popular writers of the period. The relationship of philosophical, social, political, and economic ideas to one another. The interaction of thought and events.

PREREQUISITE: Economics 210.

Not offered 1956-57.

ECONOMICS 375.[14]. *Comparative Political Economy*

In this course an attempt is made to establish the relationship between ideology, economic theory, and actual organization in the principal contemporary economies. The first half of the course is concerned with the origin and character of the economic institutions of the United States and Canada. The second half includes a study of the economic organization of the Soviet Union, the United Kingdom, and other economies.

PREREQUISITE: Economics 210.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures two hours a week).

Professor English

ECONOMICS 390.[100]. *Tutorial in Economics*

During the term the student will write a series of papers which will be the subjects of discussions between him and his tutor. The topics of the papers will be selected in the light of the student's knowledge, interests and objectives; tutors will be assigned on the same bases.

PREREQUISITE: Permission of the Department.

Day Division: Annually (tutorial hours arranged).

Evening Division: Annually (tutorial hours arranged).

ECONOMICS 391.[101]. *Tutorial in Economics*

An additional tutorial in economics may be taken subsequent to or concurrently with Economics 390. Methods of study will be designed to accord with the student's individual needs.

PREREQUISITE: Permission of the Department.

Day Division: Annually (tutorial hours arranged).

Evening Division: Annually (tutorial hours arranged).

ECONOMICS 395. *Honours Essay*

A student taking honours in economics may write an honours essay during his final year. The essay will count for one course credit.

PREREQUISITE: Permission of the Department.

*Discontinued Courses**Last offered*

ECONOMICS 5.[100]. *Natural Resources of Canada* 1949-50

ECONOMICS 6.[101]. *Agricultural Economics and Policy* 1950-51

ECONOMICS 13. *Comparative Economic Institutions* 1949-50

ECONOMICS 290. *Economics for Engineers, I* 1953-54

ECONOMICS 305.[4]. *Economics for Engineers* 1954-55

ENGINEERING

Assistant Professor; Chairman of the Department, 1956-57

S. G. Tackaberry, C.B.E., B.A.Sc.

Assistant Professor . E. E. Goldsmith, Dipl. Ing., D.I.C., M.E.I.C., A.M.I.E.E.

Sessional Lecturer R. C. McDonald, B.A.Sc.

Demonstrator E. H. Dudgeon, M.A.Sc.

All courses in this group are offered annually in the day division, except where otherwise noted. The day courses may be taken only by candidates for the Certificate in Engineering.

ENGINEERING 210.[1]. *Applied Mechanics I*

Statics. Resultants and equilibrium of force systems, analysis of structures, friction, centroids and centres of gravity, moment of inertia, methods of graphical statics.

Dynamics. Rectilinear translation, curvilinear translation, rotation, plane motion, work and energy, impulse and momentum.

TEXT: Singer, *Engineering Mechanics, Second edition*

Lectures two hours a week *both* terms.

Professor Goldsmith

Laboratory two hours a week.

Professor Tackaberry, Mr. Dudgeon

ENGINEERING 220.[12]. *Mechanical Drawing I*

Fundamental drawing techniques and their application to the solution of engineering problems, lettering, the use of instruments and materials, freehand orthographic projection and pictorial sketching, auxiliary views, sections, pictorial drawings, fasteners, dimensioning, working drawings, assembly drawings, tracing, checking, blueprinting and shop terms. Also work in projection involving true lengths and shapes, developed surfaces and intersections, problems in graphic statics, nomography.

TEXTS: *French and Vierck, Engineering Drawing, 8th Edition.*

Vierck, Cooper and Macovina, *Engineering Drawing Problems, Series II.*

Laboratory, six hours a week, *both* terms

Professor Tackaberry

ENGINEERING 230. [10]. *Surveying I*

General principles and practice of surveying with the chain, transit and level. Field work. (Half course).

TEXT: Breed, *Surveying*.

Day Division: Annually (lectures one hour a week, *both* terms, laboratory three hours a week, *second* term, approximately six to eight hours will be devoted to instrument and field work in the first term).

Evening Division: 1956-57 (lectures one hour a week, laboratory 1½ hours a week, *both* terms; approximately six to eight hours will be devoted to instrument and field work in the first term).

Mr. McDonald

ENGINEERING 235. [9]. *Surveying Field Work*

An obligatory summer school in surveying for all first year Engineering students is held in Ottawa for a period of four weeks in the spring following the first year's work.

Mr. McDonald

ENGINEERING 310. [2]. *Applied Mechanics II*

Statics. Extension of the work of the first year (Engineering 210), belt friction, flexible cables, forces in space, principle of virtual displacement, Coriolis acceleration.

Dynamics. Extension of the work of the first year, variable forces, rotation, mechanical vibrations.

Hydraulics. Fluid properties; hydrostatics, including pressure, gauges, centre of pressure, pressure on curved surfaces, stability of a gravity dam. Stability of flotation, including condition for stability, metacentric height, period of roll. General principles of fluid motion, including basic principles, equation of continuity, Bernoulli's equation.

TEXTS: Singer, *Engineering Mechanics*, Second Edition.

Ellis, *Elements of Hydraulic Engineering*.

PREREQUISITE: Engineering 210.

Lectures two hours a week *both* terms.

Professor Goldsmith

Laboratory two hours a week, course A *both* terms, course B *second* term only.

Professors Goldsmith and Tackaberry

ENGINEERING 320. [13]. *Mechanical Drawing II*

Continuation of the work of Engineering 220 (Mechanical Drawing I). Conventions, sections, extensive study of dimensioning practice, explanation of shop terms, detail and assembly drawings, sketching, piping layouts, use of welding symbols, elements of architectural and structural drawing, pictorial illustrations, use of references.

TEXT: Giesecke, Mitchell and Spencer, *Technical Drawing*.

Laboratory three hours a week: Course A, *both* terms.

Professor Tackaberry

ENGINEERING 321. *Mechanical Drawing II*

Combination of the work of Engineering 220 (Mechanical Drawing I) Explanation of shop terms, detail and assembly drawings, Piping layouts, use of welding symbols, elements of architectural and structural drawing, Pictorial illustrations, use of references.

TEXT: Giesecke, Mitchell and Spencer—*Technical Drawing*

Laboratory three hours a week, *second* term only.

Professor Tackaberry

ENGINEERING 330.[11]. *Surveying and Mapping II*

Continuation of the work of Engineering 230 (Surveying I), including mapping. (Half course.)

TEXT: Breed, *Surveying*.

Day Division: Annually (lectures one hour a week, *both* terms; laboratory three hours a week, *first* term).

Evening Division: 1956-57 (lectures one hour a week, laboratory 1½ hours a week, *both* terms).

Mr. McDonald

ENGINEERING 350.[3]. *Descriptive Geometry*

A continuation of the work taken in Engineering 220 (Mechanical Drawing I), including solution of problems involving point, line and plane, revolution, intersection of surfaces, perspective drawing; mining problems.

TEXT: Wellman, *Technical Descriptive Geometry*.

PREREQUISITE: Engineering 220.

Laboratory two hours a week, *both* terms.

Mr. Gamble

ENGINEERING 360.[4]. *Materials of Engineering*

A. Manufacture of iron and steel, non-ferrous metals and alloys; wood, stone and brick, concrete, plastics, rubber.

TEXT: Nord, *Materials of Engineering*.

B. Strength of materials: stress, strain, modulus of elasticity, Poisson's ratio, statically indeterminate loads, factors of safety, thermal stresses, thin-walled cylinders, riveted joints, welded joints, torsion in shafting, flexure formula, bending moment and shearing force diagrams, shear stress in beams, deflection of beams, moment-area method for slopes and deflection, principle of superposition, columns and struts, creep and fatigue, strain energy.

TEXT: Singer, *Strength of Materials*.

Lectures one hour a week *first* term, two hours a week *second* term.
(Laboratory work included in Engineering 310).

Professor Goldsmith

ENGINEERING 370.[5]. *Mechanics of Machines*

Displacement, velocity, acceleration, instant centres, velocity and acceleration in plane motion, slide crank, cams, rolling contact, tooth gearing; involute teeth, gear trains, belt length, general principles for belts, special mechanisms, crank effort.

TEXTS: Guillet, *Kinematics of Machine*.

Headley, *Work Book in Kinematics*.

Lectures two hours a week, *first* term, Group A only.

Professor Goldsmith

Laboratory one hour a week, *first* term, Group A only.

Professors Goldsmith and Tackaberry

ENGINEERING 380.[6]. *Heat and Thermodynamics*

An introduction to thermodynamics. (Thermometry, work, first law of thermodynamics, transfer of heat, ideal and non-ideal gases, cyclic processes, second law of thermodynamics, Carnot cycle, entropy, enthalpy, derivation of thermodynamic equations, Otto cycle, Diesel cycle, compressor cycle, properties of steam and use of steam tables).

TEXT: Lee and Sears, *Heat and Thermo-dynamics*

Lectures, one hour a week, *first* term; two hours a week *second* term.

Professor Goldsmith

*Discontinued Course**Last offered*

ENGINEERING 295.[14]. *Engineering and Society* 1951-52

ENGINEERING 240.[7]. *Engineering Problems I* 1953-54

ENGINEERING 340.[8]. *Engineering Problems II* 1953-54

ENGINEERING 390. *Public Speaking for Engineers; henceforth English 235* 1955-56

ENGLISH LANGUAGE AND LITERATURE

<i>Associate Professor; Chairman of the Department</i>	A. M. Beattie, A.M.
<i>Assistant Professors</i>	G. B. Johnston, M.A., (on leave of absence, 1956-57) G. J. Wood, M.A.
<i>Lecturer</i>	Michael Hornyansky, B.A.
<i>Instructor</i>	Ruth M. Underhill, M.A.
<i>Reader</i>	Mary A. Phillips, M.A.
<i>Assistants</i>	Myrna Friend, B.A. Jean M. LaPrairie, B.A.

PASS COURSE

Every student who elects English as his major subject will plan his programme in conference with a representative of the department. During the last three years of study he will complete the following courses in this sequence, as far as possible:

Second year, English 220.

Third year, English 320, 326, 330 and 334.

Fourth year, English 340, 344, 348 or 350.

Adjustments may be made in special cases, but always with consideration of certain indispensable objectives for students majoring in English:

1. to become acquainted with the chief works of major authors from the fourteenth to the twentieth century
2. to understand the principal developments in language, theme, and genre
3. to acquire standards of literary judgment, appreciation, and expression.

In very special circumstances, a student may fulfil these requirements in part by individual reading, assigned, supervised, and tested by the Department of English.

HONOURS COURSE

(For information regarding preparation for admission to the Ontario College of Education for the Interim High School Assistants' certificate, Type A, students are invited to consult the Registrar.)

Basic requirements—The first and second years of the pass Arts course, preferably including in the second year: English 220, History 250, and one of French 210, Latin 210, Greek 210.

Honours requirements—At least 15 courses beyond the second year, including a detailed study of each period in English literature and of all major authors and their principal works. Courses should be chosen to include those of the following which have *not* been taken in the second year:

1. At least twelve courses in English, including English 220; English 370*, 310*, 305*, 322*, 324*, 326, in third year; English 315, 317*, 330, 332*, 334, and 360*, in fourth year; English 340 and 344, 342*, 350, 352*, in fifth year. (An asterisk indicates a half course.)
2. French 210 or Latin 210 or Greek 210 and one more advanced course in the language chosen; a course in the history of philosophy (e.g. Philosophy 220 or 320); an approved option.

or

3. Four courses in a minor field, e.g. History or French or Latin or Philosophy. A reading knowledge of Anglo-Saxon is required.

At the end of the fifth year the candidate for an honours degree in English language and literature must show satisfactory performance in a written comprehensive examination.

General recommendations: A student of English is expected to own and use a good dictionary. These are recommended:

The Concise Oxford Dictionary (Oxford)

Webster's Collegiate Dictionary (Thomas Allen)

The American College Dictionary (Harper)

Also, every student of English should have available for frequent reference a handbook. Recommended:

Perrin, *Writer's Guide and Index to English* (Gage)

Fowler, *Modern English Usage* (Oxford)

ENGLISH 110. [10]. *English Composition*

The course is conducted by means of a weekly class, regular writing assignments, frequent tests, and individual conferences with the instructor. (This course carries a credit only as part of English 120. It may be taken in addition to any other full course, without charge. If it is taken as a single subject, the tuition fee is that of a half-course.)

TEXTS: To be announced.

Day Division: Annually (class one hour a week, practice period one or more hours a week).

Mr. Hornyansky and Mrs. Underhill

Evening Division: Annually (class and practice periods, two hours a week). Also Summer 1956 (class and practice period 2½ hours fortnightly).

Professor Wood and Mrs. Laprairie

ENGLISH 111. *Remedial English*

A course designed specifically for students whose powers of expression have been deemed inadequate for college assignments. Classes are given concurrently with those in English 110. See Proficiency in English, p. 48. (No credit is assigned for this course, and no fee is charged.)

ENGLISH 120. [1]. *Introduction to College Literature*

Study of selected plays, poems, essays, a novel, and short stories. The purpose of the course is to acquaint the student with basic principles of literary appreciation and with the chief forms and modes of literary expression. (English 110 is required of all students of English 120, and should be taken in the same year.)

TEXTS: To be announced.

Day Division: Annually (lectures three hours a week).

Mr. Hornyansky

Evening Division: Annually (lectures two hours a week).

Professor Wood

ENGLISH 210. [2]. *English Authors from Chaucer to T. S. Eliot*

A study of selected masterpieces in English literature from the fourteenth to the twentieth century—a course for students who do not elect English as a major subject. Essay-writing and regular participation in discussion groups are required.

TEXTS:

C. W. Dunn (ed.), *A Chaucer Reader*; Shakespeare, *Antony and Cleopatra*; Milton, *Paradise Lost*; Swift, *Gulliver's Travels*; Pope, *Selected Poems* (Penguin); Johnson, *Selected Prose and Poetry* (Rinehart); Boswell, *The Life of Samuel Johnson* (abridged by Evans); Austen, *Emma*; Wordsworth, *The Prelude and Selected Poems* (Rinehart); Dickens, *Great Expectations*; Twain, *Huckleberry Finn*; Shaw, *Caesar and Cleopatra*; T. S. Eliot, *Selected Poems* (Faber).

PREREQUISITE: English 120 or equivalent.

Day Division: Annually (lectures three hours a week, group discussion one hour a week).

Professor Beattie and Mrs. Friend

Evening Division: Annually (lectures two hours a week, group discussion one hour a week). Also Summer 1956 (lectures five hours a week).

Mr. Hornyansky

ENGLISH 220. *Renaissance Prose and Poetry*

Primarily intended as an introductory course for students majoring in English. The period covered is considered to be an essential point of reference for subsequent study of other literary periods; normally, therefore, it is to be taken in second year. Essay-writing and regular participation in discussion groups are required.

TEXTS: To be announced.

PREREQUISITES: English 110 and 120 or equivalents.

Day and Evening Division: 1956-57 (lectures two hours a week; group discussion one hour a week).

Professor Wood

ENGLISH 230. [12]. *English for Engineering Students*

A course in literature and composition for first-year Engineering students.

TEXTS: To be announced.

Day Division: Annually (lectures two hours a week).

Professor Wood

ENGLISH 235. *Public Speaking for Engineering Students*

A non-credit practice course for second-year Engineering students.

Day Division: Annually (practice periods one hour a week, *second term*).

Professor Wood

ENGLISH 305. [S1]. *Classics of the Western Tradition*

Reading, in English translations of passages from *The Iliad* and *The Odyssey*: Agamemnon, Oedipus Rex, Hippolytus, Phaedra (Seneca), Phedre; *The Aeneid*; *The Divine Comedy*. (Half course). (This course is also listed as Classical Civilization 305.)

PREREQUISITE: By permission of the Department.

Day Division: 1956-57 (seminar one hour a week *both terms*).

Professors Swallow and Wood

ENGLISH 310. [8b]. *Old English*

A brief but intensive study of Anglo-Saxon phonology, inflections, and grammar. Selected readings. (Half course.)

PREREQUISITE: For honours students.

Not offered 1956-57.

ENGLISH 315. [9]. *Introduction to Mediaeval Literature*

A survey of literary types, authors, and chief works between the Norman Conquest and the fifteenth century, with particular attention to the following: *The Owl and the Nightingale*; *Piers Plowman*; *Sir Gawain and the Green Knight*; *Morte d'Arthur*. Additional selections from Cook, *A Literary Middle English Reader*.

PREREQUISITE: For honours students.

Not offered 1956-57.

ENGLISH 317. [S2]. *The Life and Works of Chaucer*

In the first term, *The Canterbury Tales*; in the second term, *The Book of the Duchess*, *The House of Fame*, *Troilus and Criseyde*. A survey of the history of the English language. (Half course.)

TEXT: F. N. Robinson (ed.), *Chaucer's Complete Works*

A. C. Baugh, *A History of the English Language*

PREREQUISITE: For honours students; others by permission of the Department.

Not offered 1956-57.

ENGLISH 320. [4]. *Chaucer, Spenser, and Milton*

TEXTS: F. N. Robinson (ed.), *Chaucer's Complete Works*
 Spenser, *The Faerie Queene*, selected minor poems

Milton, shorter poems, *Paradise Lost*, *Samson Agonistes*, selected prose

PREREQUISITE: English 220.

Evening Division: 1956-57 (lectures two hours a week).

Professor Wood

ENGLISH 322. [S5]. *Spenser and Milton*

Study of the two great English poets of the Renaissance. Special consideration of *The Faerie Queene* and *Paradise Lost*. (Half course.)

TEXTS: Spenser, *Poetical Works* (Oxford)
 Patterson (ed.), *The Student's Milton*

PREREQUISITE: For honours students; others by permission of the Department.

Day and Evening Division: Concurrent with English 320, *second* term.

Professor Wood

ENGLISH 324. [S6]. *Drama in England until 1642*

Study of the development of dramatic production and literature from the middle ages to the closing of the theatres in 1642. Reading of representative plays. (Half course.)

PREREQUISITE: By permission of the Department.

Not offered 1956-57.

ENGLISH 326. [6]. *Life and Works of Shakespeare*

A study of the mediaeval origins of English drama, its development to and through the sixteenth and early seventeenth centuries, a survey of theatrical conditions of the Elizabethan period; lectures on the chief Elizabethan and Jacobean dramatists; intensive study of Shakespeare's environment and development as a dramatist, with careful reading of certain plays.

TEXT: A scholarly edition of Shakespeare's complete plays.

PREREQUISITE: English 210 or 220 or another approved course.

Not offered 1956-57.

ENGLISH 328. [16]. *Shakespeare and Milton*

Not offered 1956-57.

ENGLISH 330. [15a and 15b]. *Eighteenth Century Prose and Poetry*

The poetry and prose of the Neo-classic age with particular consideration of the works of Dryden, Pope, Defoe, Swift, and Johnson; the creation of a standard prose-style; the early development of the English novel; the decline of Neo-classicism.

TEXTS:

Dryden, *Selected Works* (Rinehart); Pope, *Selected Poetry and Prose* (Rinehart); Johnson, *Selected Poetry and Prose* (Rinehart); Addison, *Select Essays* (Allyn and Bacon); Swift, *Battle of the Books*, *Tale of a Tub*, *Gulliver's Travels*; Boswell, *The Life of Samuel Johnson*.

PREREQUISITE: English 220 or permission of the Department.

ENGLISH 334 is required as part of the credit carried by Eng. 330.

Not offered 1956-57.

ENGLISH 332. *Restoration and Eighteenth Century Drama*

(Half course.)

PREREQUISITE: For honours students; others by permission of the Department.

Not offered 1956-57.

ENGLISH 334.[S8]. *The Novel in the Eighteenth Century*

A study of the nature of the novel as a literary form; early forms of fiction in ancient, medieval and renaissance literature; the origins and development of the English novel in the eighteenth century.

TEXTS:

Defoe, *Robinson Crusoe*, *Moll Flanders*; Richardson, *Pamela*; Fielding, *Joseph Andrews*, *Tom Jones*; Sterne, *Tristram Shandy*, *A Sentimental Journey*; Smollett, *Humphrey Clinker*; Burney, *Evelina*; Johnson, *Rasselas*; Walpole, *The Castle of Otranto*.

PREREQUISITE: Required as part of English 330 and must be taken in the same year. May be taken for separate credit only by arrangement with the department.

Not offered 1956-57.

ENGLISH 340.[5]. *Nineteenth Century Literature*

A study of Romantic and Victorian poetry and prose. In poetry the following writers will receive special consideration: Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Rossetti, Morris, Arnold, Swinburne; in prose, Wordsworth, Coleridge, Carlyle, Newman, Ruskin, Mill, Arnold, Butler.

TEXTS: To be announced.

PREREQUISITE: English 210, or permission of the Department.

N.B. English 344 is required as part of the credit carried by English 340.

Day and Evening Division: Annually (lectures two hours a week).

Mr. Hornyansky

ENGLISH 342.[S9]. *Nineteenth Century Thought*

Readings in the major prose works of the Romantic and Victorian periods (Half course.)

TEXTS: To be announced.

PREREQUISITE: For honours students; others by permission of the instructor.

Day Division: 1956-57 (seminar one hour a week, both terms).

Mr. Hornyansky

ENGLISH 344. *The Novel in the Nineteenth Century*

A study of several important novels of the romantic and Victorian periods.

TEXTS:

Austen, *Sense and Sensibility*, *Emma*; Bronte, *Wuthering Heights*; Dickens, *David Copperfield*, *Great Expectations*; Thackeray, *Vanity Fair*; Eliot, *Middlemarch*.

PREREQUISITE: Required as part of English 340 and must be taken in the same year. May be taken for separate credit only by arrangement with the department.

Day and Evening Division: 1956-57 (lectures 1½ hours a week, first term).

Professor Beattie

ENGLISH 345.[7]. *American and Canadian Literature*

Not offered 1956-57.

ENGLISH 348.[S12]. *Canadian Poetry Since Confederation*

A survey of the chief developments in modern British and American poetry as a background to a study of Canadian poetry in the past seventy-five years. The first term will be devoted to a consideration of the most important poets of Great Britain and the United States, from Poe to the present.

The second term will be given up to a careful reading of the chief Canadian poets.

Readings in Canadian prose will be assigned.

TEXTS: Williams, *A Little Treasury of Modern Poetry*, *English and American* Klinck and Watters, *Canadian Anthology*

PREREQUISITE: Permission of the department.

Evening Division: 1956-57 (lectures two hours a week).

Professor Beattie

ENGLISH 350. [3]. *Major Twentieth-Century Authors*

A survey of themes, forms, and literary relationships since 1885.

TEXTS:

The poems by Hardy, Hopkins, Housman, Yeats, Kipling, Lawrence, Eliot, Owen, Edith Sitwell, Day Lewis, Auden, MacNeice, Spender, Dylan Thomas, in Williams (ed.), *A Little Treasury of Modern Poetry* (College Edition); Hardy, *The Mayor of Casterbridge*; Butler, *The Way of All Flesh*; Conrad, *Heart of Darkness*; Forster, *A Passage to India*; Joyce, *A Portrait of the Artist as a Young Man*; Lawrence, *Sons and Lovers*; Woolf, *Mrs. Dalloway*; Huxley, *Point Counter Point*; Greene, *Brighton Rock*; Wilde, *The Picture of Dorian Grey*, *Salome*, *The Importance of Being Earnest*; Shaw, *Mrs. Warren's Profession*, *Man and Superman*, *Major Barbara*, *Saint Joan*; O'Casey, *Juno and the Paycock*.

PREREQUISITE: English 210, or permission of the Department.

Day and Evening Division: 1956-57 (lectures two hours a week, *both* terms; seminar 1½ hours a week, *second* term).

Professor Beattie

ENGLISH 352. [S3]. *Contemporary Texts*

A detailed and analytic study of several difficult twentieth-century works, notably *Ulysses*, *The Waste Land*, *Four Quartets*, and poems by Yeats and Dylan Thomas. (Half course.)

Not offered 1956-57.

Professor Beattie

ENGLISH 355. [17]. *The English Novel*

The development of the art of fiction in English literature, from its beginnings in the eighteenth century, through the major Victorian novelists, to the chief authors of the twentieth century.

Not offered 1956-57.

ENGLISH 360. [S7]. *Literary Criticism from Aristotle to the Present*

(Half course.)

PREREQUISITE: Honours students; others by permission of the Department.

Day Division: 1956-57 (tutorial 1½ hours a fortnight, *both* terms).

Professors Wood, Beattie and Mr. Hornyansky

ENGLISH 370. [8a]. *Introduction to Honours in English*

A preparatory course devoted to the consideration of critical principles, methods of study and research in literature, bibliography, literary forms and types, elements of prosody, outlines of literary history. (Half course.)

PREREQUISITE: For honours students.

Day Division: Annually (tutorial two hours a week, *first* term).

Professor Beattie

Discontinued Courses

Last offered

ENGLISH 11. *First-year College Literature* 1948-49

ENGLISH 13. *English for Commerce Students* (Half Course) 1949-50

FINE ARTS

Sessional Lecturer (Arts) J. K. B. Robertson, M.A.

Sessional Lecturer (Music) Carman H. Milligan, Mus.Bac., M.Mus.

Courses in the history of art are offered by Carleton College in co-operation with the National Gallery of Canada. The collections and study materials of the National Gallery afford the student unusual opportunities for direct observation.

*Art*FINE ARTS 210. [1]. *An Introduction to Art History*

An introduction to the analysis of works of art, in the first term, followed, in the second, by a comparative survey of European architecture, sculpture and painting since prehistoric times.

Evening Division: 1956-57 (lectures two hours a week).

Mr. Robertson

FINE ARTS 305. *Classical and Mediaeval Art*

Architecture, sculpture and painting of the Greeks and Romans to the fall of the Roman Empire, and European art from early Christian to Gothic times.

PREREQUISITE: Fine Arts 210 or permission of the instructor.

Evening Division: 1956-57 (lectures two hours a week).

Mr. Robertson

FINE ARTS 310.[3]. *Renaissance and Baroque Art*

European architecture, painting and sculpture from the fifteenth to the eighteenth centuries.

PREREQUISITE: Fine Arts 210 or permission of the instructor.

FINE ARTS 325. *Modern Art*

European painting from 1800 to the present day, with reference also to sculpture and architecture, followed by a survey of Canadian art.

PREREQUISITE: Fine Arts 210 or permission of the instructor.

Discontinued Courses

Last offered

FINE ARTS 320.[5]. *Nineteenth and Twentieth Century Art* . . . 1951-52

FINE ARTS 330.[2]. *The Art of North America* 1952-53

FINE ARTS 350.[4]. *Studio Course in Drawing and Painting* . . . 1952-53

Music

FINE ARTS 260.[Music 1]. *Introduction to Music*

A general survey of music history from 1400 to 1900 A.D. It will include preliminary studies in musical analysis, orchestral instruments, and score reading.

TEXT: Bernstein, *Introduction to Music*.

PREREQUISITE: Permission of the instructor.

Evening Division: 1956-57 (lectures, listening and discussion three hours a week).

Mr. Milligan

FINE ARTS 365. *Music in the Middle Ages (-1450);*

The Renaissance in Music (1450-1600).

The course will commence with a preliminary study of the music of the Greeks and Hebrews. Thereupon, in chronological sequence, the story of musical development will be studied in detail under the following headings: Plainchant; Organun; the origin of the motet and mass; Ars Nova; Dunstable; the Burgundians; the Flemish school; troubadors and trouveres. In the second term, the study will continue, leading to the Renaissance, and noting especially: Josquin; the Flemish chanson groups; Dutch and German organ composers; the Venetian and Roman Schools, including the Gabrieli; Palestrina.

PREREQUISITE: Permission of the instructor.

Not offered 1956-57.

FINE ARTS 370. *Music in the Baroque Era (1600-1750);*

The Classical Period in Music (1730-1827).

The program of the course will commence with a study of the origin and development of opera as conceived by the Camerata in Florence and continued in Italy by Monteverde, Cavalli and Scarlatti; by Lully and Rameau in France; and by Henry Purcell in England. The great growth in Instrumental Music will also be explored, including the keyboard music of the French Clavecinists and the Italian, Domenico Scarlatti, the German Organ Composers and the Italian orchestra music of the early 1700's. The work of the semester will be culminated by an intensive study of the music of the two greatest composers of the period—Handel and Bach. The second semester will be given over primarily to the rise and growth of the Symphony and other cyclic forms. It will begin with the early symphonists of the Vienna and Mannheim Schools and will move on through the growing consciousness for thematic development as evidenced in the writing of K. P. E. Bach, Haydn, Mozart and Beethoven.

Evening Division: Not offered 1956-57.

FINE ARTS 375. *Romanticism in Music (1827-1890);
Twentieth Century Music (1890-the present).*

Detailed study and analysis of romantic characteristics in music as evidenced in the music of Schubert, Weber, Mendelssohn, Chopin, Schumann, Brahms, Wagner, Tschai-kowsky.

Commencing with the French impressionists, music of our century will be examined with a view to enunciating some of the principles which seem to govern this new music.

TEXT: Bauer, *Music in the Twentieth Century*.

PREREQUISITE: Permission of the instructor.

Evening Division: 1956-57 (lectures, listening and discussion three hours a week).

Mr. Milligan

Discontinued Course

Last offered

FINE ARTS 360. [Music 2]. *Great Music of the 18th and 19th Centuries* . 1952-53

FRENCH

Assistant Professor J. P. Young, B.A., D.ès L.

Assistant Professor; Chairman of the Department, 1956-57 . J. S. Tassie, M.A.

Assistant Professor C. P. Fleischauer, A.M., Ph.D.

Sessional Lecturers G. S. Du Vernet, M.A.

Helleni Webster, B.A.

As Carleton College is situated in a bilingual community, students are encouraged to take advantage of the opportunities for practical appreciation of the language as a medium of communication. Stress is laid on oral practice, supplementary reading, attendance at the theatre and other social contacts. Lectures are conducted in French as far as is feasible.

PASS COURSE

Any student intending to major in French should consult the department as soon as possible, in any case *no later than the end of the second year*, to plan his programme. This must be done with care in order to prepare the student for a comprehensive examination at the end of his final year.

Students who wish to major in French will be expected to fulfill the summer reading requirements.

HONOURS COURSE

Two honours programmes are open to the students in French: honours in French, or Honours in English and French. For either programme, Latin 110 or senior matriculation Latin is a prerequisite.

Honours in French will consist of at least fifteen courses beyond the second year, in addition to French 303, and will include the study of another foreign language. This programme must be planned with departmental approval.

Honours in English and French (preparation for admission to Ontario College of Education Type A certificate) will consist of at least sixteen and one-half

courses, in addition to French 303. This programme must be planned under the supervision of both the Department of English and the Department of French.

Both honours programmes will include the comprehensive examination at the end of the final year.

FRENCH 110. [1]. *Introduction to French Literature*

The novel and short story by authors of the nineteenth and twentieth centuries. Grammar, translation, oral practice.

TEXTS: Dondo and Ernst, *French Review Grammar* (Holt)

Yale, *Contes modernes* (Harper)

Day Division: Annually (lectures three hours a week; extra hours arranged).

Evening Division: Annually (lectures two hours a week, plus two hours fortnightly). Also Summer 1956 (lectures five hours a week).

Professor Fleischauer, Mrs. Webster and Mr. Du Vernet

FRENCH 220. *French Literature and Culture*

Brief but inclusive review of the development of French literature, with emphasis on reading and study of representative literary works of all types. Composition and oral practice.

TEXTS: Sonet and Shortliffe, *Standard French* (Harcourt Brace)

Brereton, *A Short History of French Literature* (Pelican)

Sirich and Barton, *French Anthology* (Harper)

One of the great novels of French Literature

PREREQUISITE: French 110.

Day Division: Annually. (lectures three hours a week).

Evening Division: Annually (lectures two hours a week, plus two hours fortnightly).

Also Summer 1956 (lectures five hours a week).

Professors Young and Fleischauer, and Mrs. Webster

FRENCH 301. *Le français oral.*

Conversation, prononciation, intonation, phonétique.

TEXTS: *Nouveau Petit Larousse*

Grubbs and Lapp; *French Review for Colleges* (Houghton Mifflin)

PREREQUISITE: French 220.

Day Division: 1956-57 (lectures two hours a week, half-course credit).

Professor Tassie

FRENCH 302. Composition.

Devoirs écrits. Exercices oraux.

TEXTS: *Nouveau Petit Larousse*

Whitmarsh, *Complete French course*

PREREQUISITE: French 301 or permission of the Department.

Not offered 1956-57.

FRENCH 303. Stylistique.

Problèmes de traduction et de syntaxe.

TEXTS: *Nouveau Petit Larousse*

Whitmarsh, *Cours supérieur*

PREREQUISITE: French 302. For Honours Students.

Not offered 1956-57.

FRENCH 305. L'ancien français.

Les origines de la langue. Lecture d'anciens textes. La littérature pendant le Moyen Age et à la Renaissance.

TEXTS: Bartsch, *Chrestomathie de l'ancien français.*

Cons, *Anthologie littéraire de la Renaissance française.*

PREREQUISITE: French 220.

Not offered 1956-57.

FRENCH 310. *La littérature et la pensée françaises du 17^e siècle*

La première génération des grands classiques; la deuxième génération. La querelle des Anciens et des Modernes.

TEXTS:

Cornille, *Rodogune*; Racine, *Athalie*; Molière, *Le Tartuffe*; Descartes, *Discours de la méthode*; Pascal, *Pensées*; Honoré d'Urfé, *L'Astrée*; Boileau, *L'Art poétique*; La Fontaine, *Fables*; Bossuet, *Oraisons funèbres*; La Bruyère, *Caractères*.

REFERENCE TEXT: Lansan et Taffran, *Manuel d'Histoire de la littérature française* (Heath)

PREREQUISITE: French 210.

Day Division: 1956-57 (lectures three hours a week).

Evening Division: Not offered 1956-57.

Professor Young

FRENCH 315. *La littérature et la pensée françaises du 18^e siècle*

Prolongement du classicisme. Les nouvelles idées politiques, sociales, religieuses, philosophiques.

TEXTS: Fellow and Torrey, *The Age of Enlightenment* (Crofts)

PREREQUISITE: French 210.

Day Division: 1956-57 (lectures three hours a week).

Evening Division: Not offered 1956-57.

Professor Fleischauer

FRENCH 317. *La littérature et la pensée française du 19^e siècle.*

Romantisme et réalisme. Le roman, le théâtre, la poésie.

TEXTS: Guthrie and Diller, *French Literature and Thought since the Revolution*.
Borgerhoff, *Nineteenth Century French Drama*.

PREREQUISITE: French 220.

Day Division: 1956-57 (lectures three hours a week).

FRENCH 320. [4]. *Littérature française contemporaine*

Du symbolisme et du naturalisme à nos jours. Etude détaillée d'un choix d'oeuvres parmi les grands écrivains représentatifs d'aujourd'hui.

PREREQUISITE: French 310 or 315 or permission of the Department.

Not offered 1956-57.

FRENCH 330. [5]. *Littérature canadienne de langue française*

Le roman et la poésie; le folklore; la presse. Les étudiants sont invités à produire des études originales en faisant des travaux de recherches aux Archives publiques (journaux canadiens de langue française des dix-huitième et dix-neuvième siècles, et autres documents de cette époque).

La poésie: Camille Roy, *Morceaux choisis d'auteurs canadiens*. La prose: de Gaspé, *Les Anciens Canadiens*; Ringuet, *30 Arpents*; G. Roy, *Bonheur d'occasion*; Guèvremont, *Le Survenant*; Lemelin, *Les Plouffe*; Elie, *La fin des songes*; Langevin, *Poussière sur la ville*.

REFERENCE TEXTS: Camille Roy, *Histoire de la littérature canadienne*.

PREREQUISITE: French 310 or 315.

Not offered 1956-57.

FRENCH 340. [6]. *Les Maîtres de la littérature française*

Chefs-d'oeuvre de la littérature et de la pensée françaises depuis la Renaissance jusqu'au 20^e siècle.

TEXTS: Morris Bishop, *A Survey of French Literature*, 2 vols.

G. Lanson, *Histoire de la littérature française* (Hachette).

Cassell's *French Dictionary*.

PREREQUISITE: French 310 or 315 or permission of the Department.

Not offered 1956-57.

FRENCH 360. *Le roman français*

Le développement du roman français depuis son inauguration jusqu'à nos jours. Les auteurs à étudier seront choisis dans la liste suivante: Honoré d'Urfé, Mme de La Fayette, Scarron, Le Sage, Bernardin de Saint-Pierre, Rousseau, Voltaire, Balzac, Chateaubriand, Constant, Flaubert, Mérimée, Sand, Stendhal, Louis Hémon, Saint-Exupéry, Mauriac.

REFERENCE TEXT: Lansan et Taffran, *Manuel d'Histoire de la littérature française* (Heath)

PREREQUISITE: French 310 or 315 or permission of Department.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures three hours a week).

Professor Young

FRENCH 370. Seminar on a topic of French literature.

Not offered 1956-57.

FRENCH 380. Tutorial.

Extra readings and papers. For honours students in the final year. Hours to be arranged.
Hours to be arranged.

Discontinued Courses

Last offered

FRENCH 3. *La littérature et la pensée françaises des 17^e et 18^e siècles* . . . 1951-52

FRENCH 210.[2]. *Nineteenth Century French Literature* . . . Summer, 1955

GEOGRAPHY

Sessional Lecturers . . . N. L. Nicholson, B.A., M.Sc., Ph.D., F.R.G.S.
Burton F. Kelso, M.A.

GEOGRAPHY 210.[1]. *General Geography*

The elements of physical and human geography, including land forms, climates, soils, the chief human occupations and cultural traditions, settlement and population of the world.

TEXT: To be announced.

Day Division: 1956-57 (lectures three hours a week).

Lecturer to be announced

GEOGRAPHY 320.[2]. *The Geography of Canada*

This course will outline the physical, historical and economic geography of Canada as a whole, and principal Canadian regions.

TEXTS: Putnam et al, *Canadian Regions* (Dent)

Currie, *Economic Geography of Canada* (Macmillan)

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures two hours a week).

Dr. Nicholson

GEOGRAPHY 330.[3]. *World Regional Geography*

A survey of the major natural and political regions of the world with a view to understanding their economic, social and political problems. Whenever possible, the geography of the major powers and countries of current significance will be considered in some detail.

Evening Division: Not offered 1956-57.

GEOGRAPHY 340. *Historical and Political Geography*

The geography of nation development in the North Atlantic community, stressing the rise of the West European nations, their expansion overseas, the settlement and development of North America and the evolution of North American frontiers.

Evening Division: Not offered 1956-57.

See also Geology 310 (*Physiography and Structural Geology*)

History 360 (*The Economic Development of Canada*)

GEOGRAPHY 350. *Economic Geography*

The nature and distribution of selected world economic activity, considering the inter-relation of such factors as world population distribution, the physical environment, the resource base, cultural and technological advances, and socio-political conditions.

TEXTS: Jones and Darkenwald — *Economic Geography*, (revised edition, Macmillan, 1955)

Goode's School Atlas—(revised edition, Rand, McNally, 1955)

PREREQUISITE: Permission of the Instructor.

Evening Division: 1956-57 (lectures and discussions three hours a week).

Mr. Kelso

GEOLOGY

Assistant Professor; *Chairman of the Department*, 1956-57

P.A. Hill,
B.Sc., Ph.D., F.G.S.

Sessional Lecturers F. J. Alcock, B.A., Ph.D., F.R.S.C., F.G.S.A.
Alice E. Wilson, B.A., Ph.D., F.R.S.C., F.G.S.A., S. C. Robinson, M.A.Sc.,
Ph.D., F.R.S.C., F. H. McLearn, B.E., Ph.D., F.R.S.C., F.G.S.A., R. W. Boyle,
Ph.D., A. S. MacLaren, M.A., Ph.D.

Demonstrator H. R. Steacy, B.Sc.

Prior to graduation, geology majors are required to prove to the satisfaction of the department: 1) their ability to write a geologic report, 2) their having had at least one season's field mapping (or equivalent).

GEOLOGY 210. [2]. *General Geology*

The Earth in space; evolution of the continents; rocks and minerals; mountain building and deformation; the cycle and agents of erosion; the history of life and the growth of geological ideas.

TEXTBOOKS: Longwell, Knopp and Flint, *Outlines of Geology*; Holmes, *Physical Geology*. Supplementary reading to be announced.

Day Division: Annually (lectures two hours a week, laboratory two hours a week, three field excursions).

Evening Division: 1956-57 (lectures two hours a week, laboratory two hours a week, three field excursions). Also Summer 1956: lectures five hours a week, laboratory or field trips four hours a week).

Professor Hill

GEOLOGY 310. [3]. *Physiography and Structural Geology*

Land forms and their origin. Physiographic cycles. Influence of surface features on human activities. The interpretation of topographic and geological maps. Rock structures and their origin: folding, faulting, metamorphism.

REFERENCE TEXTS: Lobeck, *Geomorphology* (McGraw-Hill).

Neven, *Structural Geology*.

Billings, *Structural Geology*.

PREREQUISITE: Geology 210.

Evening Division: 1956-57 (lectures two hours a week, laboratory two hours a week).

Dr. Alcock

GEOLOGY 320. [4]. *Mineralogy*

An introductory course concerning the recognition, properties and occurrence of approximately 100 common minerals; basic concepts of crystal lattices, symmetry and axial ratio, and an introduction to crystal chemistry. Laboratory work involves megascopic examination of minerals, crystals and crystal models, and blowpipe analysis

TEXT: *Dana's Manual of Mineralogy*, Revised by C. S. Hurlburt, Jr., 16th edition, 1952.

PREREQUISITE: Geology 210 (may be taken concurrently).

Evening Division: 1956-57 (lectures two hours a week, laboratory two hours a week).

Dr. Robinson

GEOLOGY 323. *Optical Mineralogy*

An introduction to the optical properties of the simpler rock-forming minerals as seen under the polarising microscope. (Half course.)

TEXT: H. G. Smith, *Minerals and the Microscope* (Murby)

REFERENCE TEXT: Rogers & Kerr, *Optical Mineralogy*

PREREQUISITE: Geology 320.

Day Division: 1956-57 (seminars periods and laboratory, five hours a week, first term).

Professor Hill

GEOLOGY 325. *Economic Geology*

A study of metallic and non-metallic mineral deposits, their origin, classification, occurrence, method of mining and economic value. Laboratory: logging and examination of drill cores, evaluation of geological reports and ore samples, structural problems, visits to the laboratories of the Geological Survey and Bureau of Mines. (Half course.)

TEXT: Bateman, *Economic Mineral Deposits*

REFERENCE TEXTS: Moore, *Coal*; Landers, *Petroleum Geology*; and others to be announced.

PREREQUISITES: Geology 310, 320.

Day Division: Not offered 1956-57. To be offered 1957-58 (lectures, laboratory, and seminars five hours a week).

GEOLOGY 330.[5]. *Palaeontology*

The principles of palaeontology; the classification of invertebrates, their morphology and evolutionary history with reference to the broader phases of vertebrate evolution. An introduction to the use of invertebrates in stratigraphic interpretation.

TEXT: Moore, Lalicker and Fischer, *Invertebrate Fossils*

REFERENCE TEXTS: Shrock and Twenhofel, *Principles of Invertebrate Palaeontology*

Shimer, *An Introduction to the Study of Fossils*

PREREQUISITE: Geology 210, or permission of the Department.

Day Division: 1956-57 (combined seminars and laboratory five hours a week).

Dr. Wilson

GEOLOGY 355. *Petrology*

The composition, origin and classification of the igneous, metamorphic and sedimentary rocks. Laboratory: megascopic and microscopic examination of rocks and their mineral constituents. (Half course.)

TEXT: G. W. Tyrrel, *Principles of Petrology* (Methuen)

REFERENCE TEXTS: Hatch & Wells, *Petrology of the Igneous Rocks*
H. B. Milner, *Sedimentary Petrography*
Harker, *Metamorphism*

PREREQUISITE: Geology 323.

Day Division: 1956-57 (seminars and laboratory five hours a week, second term).

Professor Hill

GEOLOGY 360. *Stratigraphy*

An introductory course stressing principles and procedure; lithological and faunal succession and classification; a critical study of methods of correlation, interpretation of the stratigraphic record, tectonic framework and palaeogeography. Examples are chosen mainly from Canadian stratigraphy.

REFERENCES: Krumbein and Sloss, *Stratigraphy and Sedimentation*.
Reports of federal and provincial geological surveys.
Transactions of geological societies; geological journals.

PREREQUISITES: Geology 210 and Geology 330 (the latter may be taken concurrently).

Day Division: Not given 1956-57. Will be given 1957-58 (combined seminars and laboratory, five hours a week).

GEOLOGY 370. *Field Geology*

An introduction to the technique of geological mapping; the observation and interpretation of field data; the use of topographic maps and aerial photographs. Compulsory for Geology majors who lack equivalent experience.

PREREQUISITE: Geology 310.

Day and Evening Division: To be given in the Spring of 1957; exact dates to be announced later.

Professor Hill

GEOLOGY 375. *Principles of Geochemistry*

An introductory nonmathematical course; the chemical factors responsible for the distribution and migration of the elements in the lithosphere, hydrosphere, atmosphere and biosphere; the geochemistry of each element in the periodic table. Laboratory work involves quantitative colorimetric determinations of the common metallic elements in water, rock and soil and is designed to give the student a knowledge of the techniques of geochemical prospecting. (Half course).

REFERENCE TEXTS: Mason, *Principles of Geochemistry*
Rankama and Sahama, *Geochemistry*
Goldschmidt, *Geochemistry*
Clark, *Data of Geochemistry*
Pauling, *General Chemistry*
Sandell, *Colorimetric Determination of Traces of Metals*

PREREQUISITES: Geology 210, 320 (may be taken concurrently), Chemistry 210, Chemistry 310 and 330 and Physics 330 are desirable but not essential.

Day and Evening Divisions: 1956-57 (combined lectures and laboratory five hours a week, first term).

GEOLOGY 380. *Precambrian Geology*

The distribution of Precambrian rocks; their sub-division and lithology; structural correlation and methods of age determination. Laboratory work will include practical field work and the study of maps of Precambrian areas. (Half course).

READING: Selected reading to be announced.

Day and Evening Divisions: 1956-57 (combined lectures and laboratory five hours a week, second term).

Discontinued Courses***Last offered***

GEOLOGY 211.[2]. <i>General Geology</i>	1952-53
GEOLOGY 340. <i>Sedimentation</i>	1953-54
GEOLOGY 341. <i>Stratigraphy and Sedimentation</i>	1954-55

GERMAN

Assistant Professor; Chairman of the Department, 1956-57 H. H. Weil, B.A., Ph.D.
Sessional Lecturer Richard Hoff, Dr. jur.

GERMAN 61. [AA]. *Beginner's German for Science Students*

An elementary course for Science students. The work will comprise the elements of grammar, the building of a basic vocabulary, translation exercises and the reading of German scientific texts. (May be taken for credit only by Science students.)

TEXT: Fehlau, *Fundamental German* (Harper)

READING: Von Baravelle, *Physile* (Heath)

Day Division: Annually (lectures three hours a week).

Evening Division: Annually (lectures three hours a week).

Dr. Hoff

GERMAN 110. [1]. *First-year College German*

In this course the main stress will be put on reading and oral practice. Also translation from and into everyday German and a review of the elements of German grammar.

TEXTS: Hagboldt and Kaufman, *German Review and Composition* (Heath).

Schinnerer, *Reading German* (Macmillan).

READING: Froeschel, *Himmel, meine Schube!* (Heath)

PREREQUISITE: German 51 or its equivalent.

Evening Division: Annually (lectures three hours a week).

Dr. Hoff

GERMAN 115. *First-year College German (New Course)*

Grammar, reading, translation, and oral exercises.

Day or Evening Division: 1956-57 (lectures four hours a week).

Professor Weil

GERMAN 210. [2]. *Second-year College German*

A comprehensive and more detailed review of German grammar; written and oral exercises in translation and composition; easy German conversation; reading of modern German prose and some of the masterworks of nineteenth century poetry.

TEXT: Chiles, *German Composition and Conversation* (Ginn).

READING: Foltin, *Aus nah und fern* (Houghton Mifflin, 1950).

Lang and Needler, *The German Reader* (Ryerson).

Freytag, *Die Journalisten* (Heath)

PREREQUISITE: German 110.

Day Division: Annually (lectures three hours a week).

Professor Weil

GERMAN 310. [3]. *Third-year College German*

Advanced written and oral translation exercises and composition, sight translation and conversation. Students will be encouraged to increase the fluency and correctness of their spoken German. Reading and discussion of classical and modern German prose and drama.

TEXT: Chiles, *German Composition and Conversation* (Ginn).

READING: Albert Schweitzer, *Leben und Denken* (Heinemann)

Herman Hesse, *Knulp* (Oxford)

Inge Scholl, *Die Weisse Rose* (Houghton Mifflin).

PREREQUISITE: German 210.

GERMAN 320. [5]. *Classical German Literature*

Fourth-year college German. Exercises in advanced and highly idiomatic translation. German composition. The reading will include a standard work of the classical period of German literature.

PREREQUISITE: German 310 (may be taken concurrently).

GERMAN 321. *Fourth-year college German*

Exercises in advanced and highly idiomatic translation. German composition. Reading of modern German literature.

TEXT: Wanstall, *Tests in German Composition and Grammar* (Harrap).

READING: Hermann Hesse, *Knulp* (Oxford).

Inge Scholl, *Die weisse Rose* (Houghton Mifflin).

Bithell, *An Anthology of German Poetry 1880-1940* (Methuen).

PREREQUISITE: German 310.

GERMAN 330. [6]. *Modern German Literature*

An alternative course in fourth-year college German which is, at the same time, designed for students who have taken German 320 and wish to improve their knowledge further. Exercises in advanced and highly idiomatic translation. German composition. The reading will include a work by an eminent German writer of the present.

PREREQUISITE: German 310.

Not offered 1956-57.

GREEK

(See Classics)

HISTORY

Professor James A. Gibson, M.A., B.Litt., D.Phil.

Assistant Professor; Chairman of the Department, 1956-57

David M. L. Farr, M.A., D.Phil.

Assistant Professor G. S. Couse, B.A.

Lecturers S. R. Mealing, M.A., B. Litt, (on leave of absence, 1956-57)

John S. Moir, M.A., Ph.D.

Sessional Lecturer Ronald Grantham, M.A.

Instructor J. M. McQueen, M.A.

Courses in the Department of History are designed in part to enable students to benefit from the unique and extensive resources which are available in the national capital. Students in Canadian and colonial history are encouraged to make use, for example, of the wealth of material found in the Public Archives of Canada; students in international relations and associated subjects, of the vast body of documentary information available from the Department of External Affairs and other departments of the Government of Canada, from the information offices of the foreign missions established in Canada, and from a variety of non-governmental and voluntary agencies which maintain national headquarters in Ottawa. The advantages of Ottawa as a centre for the study of Canadian, colonial and Commonwealth history are, indeed, indisputable and the Department has sought to utilize these advantages in its instructional programme.

PASS COURSE

Students majoring in History in the Pass Course are required to complete at least seven courses in History in their final three years of study. One of these courses must be History 220 or 250, taken in the second year; it is also recommended that History 230 be included in the work of the second year. The remaining

courses in History, as well as those selected in other subjects, must be chosen in consultation with a member of the Department.

Students who wish to major (or to take Honours) in History will be expected to fulfil the summer reading requirements.

HONOURS COURSE

(For information regarding preparation for admission to the Ontario College of Education for the Interim High School Assistants' certificate, Type A, students are invited to consult the Registrar.)

Basic requirements—The first and second years of the pass Arts course, preferably including History 220 or 250 in the second year.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in the second year:

1. At least 10 courses in History including: History 220 *or* 250, 230, 330, 340, 350, 388; History 320 *or* 322; History 396 (a dissertation) and two others.
2. At least four courses in a minor field (ordinarily in Economics, Geography or Political Science, but may be in English or another subject).
3. History 390, a seminar in historical method, which is a half course taken (ordinarily in the fourth year) for no credit.

Candidates will be required to show a proficient reading knowledge of a modern language other than English, preferably French or German.

At the end of the fifth year each candidate will present a dissertation, involving research into a problem of historical interpretation, in a fashion displaying competence in historical method. The subject for research will be settled in consultation with the Department, and a supervisor will be assigned. The candidate will be publicly examined upon his dissertation after presentation. This dissertation is listed in the calendar as History 396.

HISTORY 110.[1]. *Main Directions in Modern History, 1870-1945*

This course will provide a preliminary survey of the forces and tendencies which since 1870 have influenced the growth of European civilization. Emphasis will be laid on the study of political and economic factors, such as nationalism and democracy, industrialism and imperialism, and their expression in national and international policies in modern Europe. The rise of the dictatorships and the failure of collective security will be examined in tracing the history of Europe between the wars. The course will conclude with a consideration of the roots of the present world situation. (This course will ordinarily be open only to first-year students. If permission is granted to take it for upper-year credit, additional essays and reading will be required).

TEXT: Text to be announced.

Day Division: Annually (lectures and discussion three hours a week).

Evening Division: 1956-57 (lectures two hours a week, group discussions monthly).

Professor Farr and Mr. Grantham

HISTORY 220.[9]. *An Introduction to Western Civilization*

This course aims at an historical understanding and evaluation of our present way of life. It will proceed from a general comparison of primitive and civilized societies to a study of the development of the economic, social, and political organization of Western Europe as well as its arts, intellectual speculation and religion. Therein it will be concerned primarily with discerning the universal characteristics of the process of civilization and the peculiar characteristics of that to which we have fallen heir, and finally with applying these conclusions to present problems. It is intended that this course or History 250 will be prerequisite for all advanced courses in European and British history.

TEXT: Setton and Winkler, *Great Problems in European Civilization* (Prentice-Hall).

PREREQUISITE: History 110 or the equivalent. (Although intended primarily for second-year students, this course may be taken for upper-year credit, in which case additional essays and reading will be required).

Evening Division: 1956-57 (lectures and discussion three hours a week).

Professor Couse

HISTORY 230. [3]. *History of North America in the Colonial Period*

An introduction to the history of Canada and the United States, giving attention to geographic factors in North American history and the exploration and settlement of the continent to the end of the eighteenth century. The development of the Spanish, English, and French empires in North America will be described, noting the political institutions, economic life and social organizations of each region. The course will conclude with the Anglo-French rivalry for North America, the American Revolution, and the effects of the Revolution settlement upon British North America to 1791.

TEXT: Savelle, *Foundations of American Civilization* (Clarke, Irwin).

PREREQUISITE: History 110 or the equivalent.

Day Division: 1956-57 (lectures and discussion three hours a week).

Evening Division: Not offered 1956-57.

Professor Farr

HISTORY 250. *An Introduction to English History*

This course is intended, like History 220, to provide an introduction to the historical study of society and to an understanding of the characteristics of Western civilization. It tries to attain these objects more particularly by the study of English social, economic, political and intellectual development from the end of the Roman occupation. It is intended also to provide an elementary knowledge of English history as a background to further study or to other fields of specialization. This course and History 220 are alternative prerequisites for further courses in British and European history.

TEXT: Carrington and Jackson, *A History of England* (Macmillan).

PREREQUISITE: History 110 or the equivalent. (Although intended primarily for second-year students, this course may be taken for upper-year credit, in which case additional essays and readings will be required).

Day Division: 1956-57 (lectures and discussion three hours a week).

Evening Division: Not offered 1956-57.

Dr. Moir

HISTORY 275. [19]. *Greece and Rome in the Ancient World*

(Offered in the Department of Classics as *Classical Civilization* 275.)

HISTORY 320. [4]. *History of Europe, 500-1450*

This course, dealing with the mediaeval foundations of European history, will investigate the emergence of a unique civilization in Western Europe; its expansion and relations with the Islamic and Byzantine civilizations; the process of development within its economy, social structure, politics, arts and intellectual activity; the role of Christianity as related to all these aspects of secular life; and the relationship between the mediaeval and modern phases of Western Civilization.

RECOMMENDED FOR REFERENCE: Ferguson and Bruun, *Survey of European Civilization*, Vol. I (Houghton-Mifflin).

PREREQUISITE: History 220 or 250.

Day Division: 1956-57 (lectures and discussion three hours a week).

Professor Couse

HISTORY 322.[6]. *History of Europe, 1450-1648*

The primary concern of this course will be to arrive at an accurate appreciation of the Renaissance and the Reformation, by considering the development of the concepts themselves, the degree to which they represent, as historical phenomena, a departure from the Middle Ages and a foreshadowing of the modern way of life, and the causes and results of the changes which they involved.

RECOMMENDED FOR REFERENCE: Ferguson and Bruun, *Survey of European Civilization*, Vol. I (Houghton-Mifflin).

Readings will be assigned.

PREREQUISITE: History 220 or 250.

Not offered 1956-57.

HISTORY 324.[12]. *History of Europe: Westphalia to Waterloo (1648-1815)*

This course will consider the ideas of absolute monarchy in France under Louis XIV; the Puritan Revolution in England; the rise of Russia and changes in the Baltic area; the growth of Prussia and the rebirth of Austria in German affairs; Great Britain and France in the eighteenth century; the competition for empire in the eighteenth century; the enlightened despots; the beginnings of the Industrial Revolution; the Age of Reason; the French Revolution and the age of Napoleon in Europe.

RECOMMENDED FOR REFERENCE: Ferguson and Bruun, *Survey of European Civilization*, Vol. II (Houghton-Mifflin).

Stearns, *Pageant of Europe* (Harcourt, Brace).

PREREQUISITE: History 220 or 250.

Not offered 1956-57.

HISTORY 326.[14]. *History of Modern Europe, 1815-1919*

This course will aim at an appreciation of the distinctive features of European life in the nineteenth century as manifested in the areas of economics, social relations, domestic and international politics, the arts, thought and religion.

PREREQUISITE: History 220 or 250.

Not offered 1956-57.

HISTORY 330.[13]. *Canada from 1791: The Evolution of Canadian Self-Government*

This course will consider at the outset the transition from French Canada to British North America, and the political conflicts which arose from differences in racial background and political experience. In addition to emphasis on the constitutional evolution from representative to responsible government, and from federation to autonomy, attention will be given to influences on the government of Canada from Great Britain and from the United States, and to the emergence of Canada into the world community.

RECOMMENDED FOR REFERENCE: Kennedy, *The Constitution of Canada* (Oxford).
Brebner, *North Atlantic Triangle* (Ryerson).

PREREQUISITE: History 230 or permission of the Department.

Day Division: Annually (lectures three hours a week).

Evening Division: Summer 1956 (lectures five hours a week).

Professor Gibson and Mr. Mealing

HISTORY 340.[8]. *History of the United States of America*

This course will consider the colonial background of American history; the American Revolution and the making of the Constitution; the expansion of the Union, the sectional struggle, the Civil War, the era of reconstruction; the emergence of modern America, the political history of the United States after 1877, and the United States in world politics.

PREREQUISITE: History 230.

Not offered 1956-57.

HISTORY 343. [18]. *Canada-United States Relations, 1898-1948*

This course, designed primarily for honours students in history, political science, economics, public administration and journalism, will trace the growth of official and non-official machinery in the relations between the two countries, with special emphasis on the period 1938-1948. It will likewise consider the impact of the principal personalities of the period, and attempt to assess the importance in the world community of the example of Canada-U.S. co-operation. Individual report projects will be assigned.

RECOMMENDED FOR REFERENCE: Brebner, *North Atlantic Triangle* (Ryerson).
McInnis, *The Unguarded Frontier* (Doubleday-Doran).

PREREQUISITE: Permission of the Department.

Not offered 1956-57.

HISTORY 350. *British Constitutional History*

This course will survey the development of the British constitution from its Anglo-Saxon beginnings. It will be concerned primarily with institutions, political parties, and the theoretical bases or justifications of them, taking into account also the social forces significant in constitutional change. Use will be made of documents, particularly after 1660.

PREREQUISITE: History 220 or 250 or permission of the Department.

Not offered 1956-57.

HISTORY 353. [10]. *English Social History*

The central theme of this course will be the transition from feudal to modern social organization and habits of daily life. Of this intellectual speculation, religious belief and the arts will be considered a part. Economic and political matters will be considered only in so far as they impinge on this theme. Students will be expected to investigate some single sphere of special interest.

PREREQUISITE: History 220 or 250 or permission of the Department.

Not offered 1956-57.

HISTORY 357. *The Tudors and Stuarts, 1485-1714*

This course will consider all the important currents in sixteenth- and seventeenth-century British history, whether social, economic, political, religious or intellectual. Students will be expected to investigate some single sphere of special interest.

PREREQUISITE: History 220 or 250.

Not offered 1956-57.

HISTORY 358. *British History from 1714*

The main emphasis of this course will fall on the nineteenth century, all the main currents of which it will attempt to consider in so far as they affected Great Britain. Students will be expected to investigate some single sphere of special interest.

Readings will be assigned.

PREREQUISITE: History 220 or 250.

Day Division: 1956-57 (lectures and discussion three hours a week).

Dr. Moir

HISTORY 360. [23]. *The Economic Development of Canada*

This course is designed as an advanced course in the economic history and economic development of Canada. It will give special attention to the influences of geography and physical environment and the impact of ideas and institutions from other areas upon North American development. Extensive reading and report topics will be assigned. (This course is listed also as Economics 360.)

RECOMMENDED FOR REFERENCE: Innis, *An Economic History of Canada* (Ryerson).

Currie, *Economic Geography of Canada* (Macmillan).

PREREQUISITE: Economics 210 or History 230. (This course will ordinarily be open only to students in the third or higher years.)

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures and discussion three hours a week).

Professor Farr and Dr. Moir

HISTORY 370.[7]. *British Expansion Overseas and the British Empire*

This course will consider the expansion of the British people overseas and the development of the British Empire and Commonwealth. Commencing in 1784, the course will survey the Empire as it existed after the American Revolution and examine the transformation in its political and economic structure which occurred in the first half of the nineteenth century. The interaction between British imperial thinking and official policy will be traced in the Empire of the Pax Britannica. In the twentieth century emphasis will be laid on the attainment of Dominion status, as well as the impact of economic forces and world affairs on the modern Empire. There will be some discussion of the problems of plural societies and of welfare and development in the dependent Empire.

RECOMMENDED FOR REFERENCE: Knaplund, *The British Empire, 1815-1939* (Harper).

PREREQUISITE: Permission of the Department. Recommended: History 230.

Not offered 1956-57.

HISTORY 373.[17]. *The British Commonwealth of Nations*

This course, designed primarily for honours students in history, political science, economics, journalism, and public administration, will deal with the philosophy, structure, and development of the Commonwealth association under the Crown. It will survey the formation and expression of opinion, both official and non-official, regarding Commonwealth policies. Official documents will be drawn upon extensively, and individual report projects will be assigned.

RECOMMENDED FOR REFERENCE: Hodson, *Twentieth-Century Empire* (Faber); Mansergh, *The Commonwealth and the Nations* (Oxford); Carter, *The British Commonwealth and International Security* (Oxford); Soward, *The Changing Commonwealth* (Oxford).

PREREQUISITE: Permission of the Department.

Not offered 1956-57.

HISTORY 380.[16]. *An Introduction to International Relations, 1919-1939*

This course will discuss the foreign policies of the major powers of Europe, Asia, and North America in the inter-war period and will also investigate the problems of international organization and collective security during these years. The course is designed primarily for upper-year students majoring in history, political science, public administration, economics, commerce and journalism.

RECOMMENDED FOR REFERENCE: Carr, *International Relations between the Two World Wars, 1919-1939* (Macmillan); Potter, *An Introduction to the Study of International Organization* (Appleton-Century); *Complete World Atlas* (Hammond, New York).

PREREQUISITE: Permission of the Department.

Day Division: 1956-57 (lectures and discussion three hours a week).

Professors Gibson and Couse

HISTORY 388.[25]. *The Philosophy of History*

A seminar which seeks to provide students in various fields of specialization an opportunity to consider the place of history within the total range of intellectual disciplines. Its central concern will be the problem of the relation between history and philosophy. As an historical study, it will deal with the thought of Greek, Roman and European philosophers and historians on this problem, and it will emphasize the distinction between the Classical answer and nineteenth-century historicism.

PREREQUISITE: Permission of the Department. (This course ordinarily will be open only to students in the fourth and higher years, and preference will be given to students in honours courses in any department.)

Not offered 1956-57.

HISTORY 390.[S1]. *Fourth-year Honours Seminar*

This seminar will discuss problems of historical method, including the sources of history, the essentials of historical research, historical criticism, the weighing of evidence, bias in historical recording, and the mechanics and vocabulary of historical writing with special emphasis on the preparation of historical papers. (Credit for this seminar will be given only if it is taken in conjunction with a History honours course.) (Half course.)

Day Division: Annually (tutorial hours arranged, both terms).

Members of the Department.

HISTORY 396.[35]. *Dissertation for Honours in History*

Candidates for specific honours in History will be required to present, at the end of their fifth year, a dissertation involving research into a problem of historical interpretation, and presentation of it in a fashion displaying an adequate competence in historical method. The subject for research will be settled in consultation with the Department and a supervisor will be assigned. The candidate will be publicly examined upon his dissertation after presentation.

Day Division: Annually (tutorial hours arranged, *both* terms).

Members of the Department.

*Discontinued Courses**Last offered*

HISTORY 2. <i>History of the United States and Canada since 1763</i>	1946-47
HISTORY 2. <i>History of Europe, 1400-1789</i>	1948-49
HISTORY 11. <i>North America and the Modern World</i>	1949-50
HISTORY 355.[5]. <i>English History to 1689</i>	1951-52
HISTORY 356.[15]. <i>English History from 1689</i>	1950-51
HISTORY 383.[24]. <i>Modern Diplomatic History, 1878-1945</i>	1951-52

See also Economics 315, *Economic History*

Geography 340, *Historical and Political Geography*

Political Science 310, *Comparative Government*

JOURNALISM

Professor and Director of the Department

Wilfrid Eggleston, M.B.E., B.A., F.A.G.S.

Assistant Professor W. H. Kesterton, B.A., B.J.

Sessional Lecturer Frances Oakes Baldwin, B.A., B.J.

Seminar Leaders W. B. Herbert, B.A., LL.B.

Tom Foley

Field Work Supervisor Vincent Pask

Note: Journalism subjects may be taken only by candidates for the degree of Bachelor of Journalism.

JOURNALISM 210. *Preparatory Lectures for Second-year Journalism Students*

A series of meetings with members of the staff of the Department of Journalism will be arranged for the guidance of students enrolled in the second year of the Journalism course. Details as to dates, themes, and instructors will be published on the bulletin board early in the teaching term. Second-year Journalism students will be expected to attend these sessions, which will be listed in the official schedule of classes, but the lectures yield no academic credit and no tuition fee is charged for them.

Day Division: Annually (lectures arranged).

Professors Eggleston and Kesterton

JOURNALISM 310.[1]. *Introduction to Journalism*

A broad survey of the whole field. Discussion of free lance writing, with practical exercises in the magazine article, newspaper feature dramatic script, and the short story. Marketing. Personal qualifications and opportunities. The main trends in the journalism of Canada from 1752 to the present will be examined, and important publications and representative journalists of the period considered. Some account of the press of other countries also will be given.

RECOMMENDED READING: Wolseley and Campbell, *Exploring Journalism* (Prentice-Hall).

Day Division: Annually (lectures and practical exercises, four hours a week).

Professors Eggleston and Kesterton; and Mrs. Baldwin

JOURNALISM 320.[2]. *Fundamentals of Reporting*

The nature of news values; how to recognize and collect news; how to analyse, organize and report it. Interviewing and news gathering. This is mainly a practical course, based on assignments in reporting and other forms of writing.

RECOMMENDED READING: Neal, *News Gathering and News Writing* (Prentice-Hall).

Day Division: Annually (lectures and practical exercises, four hours a week; group discussions).

Professors Eggleston and Kesterton

JOURNALISM 330.[3]. *Editing*

Copy-reading and head-writing. This course will provide practical instruction in the duties and responsibilities of the deskman, and training in reading copy and writing headlines. The responsibilities and opportunities of the editor in his community will be discussed; the press and society; semantics; the ethics of journalism; freedom of the press; the law and the press; censorship in war and peace; news policy; the sources and interpretation of foreign news; layout; the use of illustrations.

TEXT: Bastian and Case, *Editing the Day's News* (Macmillan).

PREREQUISITE: Journalism 310.

Day Division: Annually (lectures three hours a week).

Professor Eggleston

JOURNALISM 340.[4]. *Interpretative Reporting*

Coverage of governmental activities and other specialized fields such as business, music, drama, the film, politics, the popularization of science, the column; the book review. Development of sources and contacts. Writing for the ear in the radio newscast, the radio talk and commentary. This is mainly a practical course based on assignments, and includes field work on a daily newspaper and a radio station. Methods of research; filing; work in newspaper library and morgue.

TEXT: MacDougall, *Interpretative Reporting* (Macmillan).

PREREQUISITE: Journalism 320.

Day Division: Annually (lectures and practical exercises averaging four or five hours a week).

Professor Eggleston

JOURNALISM 350.[5]. *Career Seminar in Journalism*

Round table discussions with guest speakers. Each student in Journalism 350 will be required to choose a current topic of Canadian interest for extensive live research and study as preparation for an oral report, which will be followed by questioning from instructor and group. Vocational guidance. Groups will be arranged whenever possible to meet the needs of those who have special interests or ambitions.

PREREQUISITE: For final year Journalism students.

Day Division: Annually (Round table sessions, two hours a week, plus special seminars).

Members of the Department

LATIN

(See Classics)

MATHEMATICS

Professor L. N. Richardson, M.A., M.Sc.

Professor, Chairman of the Department, 1956-57

M. S. Macphail, M.A., D.Phil., F.R.S.C.

Assistant Professor R. J. Semple, M.A.

Instructor R. B. Gamble, B.Sc.

Sessional Lecturers L. W. Rentner, B.A.

D. K. Dale, B.A.; R. L. Beatty, B.A.; Mavis Brown, B.A.; J. C. Gardner, B.A.;

H. L. Armstrong, M.Sc.; T. Donnelly M.A.; J. L. Howland, M.A., Ph.D., J. W.

Mayne, M.A., M.S., A. R. Veall, B.A.

PASS COURSE

Pass students must take Mathematics 210, 250, 255, 310, and at least two additional full courses (or the equivalent in half courses), chosen with the approval of the Mathematics Department. Summer reading may also be prescribed.

HONOURS COURSE

(For information regarding preparation for admissions to the Ontario College of Education for the Interim High School Assistants' certificate, Type A, students are invited to consult the Registrar.)

Basic requirements—The first and second years of the pass arts or science course.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in the second year:

1. At least nine courses in Mathematics, including: Mathematics 210, 250*, 255*, 310, 320; one or both of Mathematics 390*, 395*. (An asterisk indicates a half course.)
2. At least four courses in a minor field (ordinarily Physics, Chemistry, Economics or Philosophy, but may be in any subject in which use is made of statistics).
3. Courses in Mathematics and in the minor field together must total at least 14.
4. At least an introductory course in *both* French and German.
5. If possible, three additional non-science, non-Mathematics courses.

MATHEMATICS 110 [1]. *Algebra*

Ratio, proportion, variation, theory of quadratics solution of equations, the progressions, interest and annuities, the function, permutations and combinations, binomial theorem. (Half course.)^a

TEXT: Petrie, Baker, Levitt and MacLean, *Algebra*

Day Division: Annually (lectures two hours a week, *both* terms).

Evening Division: Annually (lectures two hours a week, *both* terms). Also Summer 1956 (lectures 2½ hours a week).

Mr. Gamble and Mr. Rentner

MATHEMATICS 111. [1]. *Geometry*

Cartesian co-ordinates. The straight line, circle and conics with some elementary properties. (Half course.)^a

TEXT: Durrant and Kingston, *A New Analytic Geometry*

Day Division: Annually (lectures two hours a week, *both* terms).

Evening Division: Annually (lectures two hours a week, *both* terms). Also Summer 1956 (lectures 2½ hours a week).

Professor Richardson and Mr. Gardner

MATHEMATICS 112. [1]. *Trigonometry*

Fundamental formulae, solution of triangles, logarithms, applications to problems in statics. (Half course.)^a

TEXT: Petric, Baker, Levitt and MacLean, *Elements of Trigonometry and Statics*

Day Division: Annually (lectures two hours a week, *both* terms).

Evening Division: Annually (lectures two hours a week, *both* terms.) Also Summer 1956 (lectures 2½ hours a week).

Mr. Gamble and Mr. Rentner

MATHEMATICS 115. *General Mathematics*

A unified treatment of selected topics of Algebra, Geometry, Trigonometry, and other branches of Mathematics. This course satisfies the mathematic requirements of the first year of Arts, Commerce, and Journalism; it does not, however, give entry to Mathematics 210 except by special permission.

TEXT: Newsom and Eves, *Introduction to College Mathematics*.

Day Division: Annually (lectures four hours a week, *both* terms).

Professor Sample

MATHEMATICS 210. [2]. *Calculus*

An introductory course in differential and integral calculus, with emphasis on the fundamental processes and applications.

TEXT: Peterson, *Elements of Calculus*

PREREQUISITE: Mathematics 110, 111, 112. (Permission *may* be granted to enter with Mathematics 110 and one of 111, 112.)

Day Division: Annually (lectures three hours a week).

Evening Division: Annually (lectures three hours a week). Also Summer 1956 (lectures five hours a week).

Professor Richardson, Mr. Beatty, and Mr. Gamble

MATHEMATICS 220. [3a]. *Mathematics of Investment*

Simple and compound interest, discount, annuities, perpetuities, amortization, sinking funds, bonds, debentures, depreciation, probability and its application to life insurance. (Half course.)

TEXT: Hart, *Mathematics of Investment*.

PREREQUISITE: Mathematics 110, 111, or Mathematics 115.

Day Division: Not offered 1956-57.

Day and Evening Division: 1956-57 (lectures 1½ hours a week, *both* terms).

Professor Macphail

MATHEMATICS 230. [3b]. *Elementary Mathematical Statistics—Part I*

Frequency distributions; measures of central tendency, dispersion, skewness, kurtosis; moments; elementary probability; probability distributions—binomial, normal, Poisson. (Half course) (See also Economics 320, Statistical Methods in the Social Sciences).

TEXT: To be announced.

PREREQUISITE: Mathematics 110, 111, or Mathematics 115.

Evening Division: Annually (lectures three hours a week, *first* term).

Mr. Dale

^aAny one of Mathematics 110, 111, 112 carries half-course credit. Full-course credit is given when two or three of these are taken. Students are reminded that all three are prescribed in the first year of the B.Sc. and the B.Com. courses, and for entry to the Engineering course. The tuition fee for one of the three is that of a half course; the fee for any two or three, taken in the same year, is that of a full course.

MATHEMATICS 235.[3c]. *Elementary Mathematical Statistics—Part II*

Sampling; statistical inference; tests of hypotheses—mean variance; use of the “t”, “F”, and “chi-squared” distributions; confidence limits—mean, variance; introduction to analysis of variance, including randomized block design; enumeration statistics; least squares, simple regression and correlation.

PREREQUISITE: Mathematics 230.

Evening Division: Annually (lectures three hours a week, *second* term).

Mr. Dale

MATHEMATICS 236. *Applied Statistics.*

Random sampling from finite and infinite populations; applications of hypergeometric, binomial, Poisson, normal and chi-squared distributions; types of error; operating characteristics; sampling inspection; single, double and sequential sampling plans; quality control and control charts; tolerance limits; sensitivity experiments. Applications will be mainly in industry, manufacturing, and engineering. (Half course.)

TEXT: To be announced.

PREREQUISITE: Mathematics 230, 235.

Evening Division: 1956-57 (lectures 1½ hours a week, *both* terms).

Mr. Donnelly

MATHEMATICS 237. *Sampling Survey Methods*

Theory of sampling from finite populations; sample design, random, stratified, etc.; area, quota, purposive, systematic and double sampling; principles of optimum allocation; relative efficiencies of different methods.

PREREQUISITE: Mathematics 230, 235.

Not offered 1956-57.

MATHEMATICS 240.[4b]. *Analytic Geometry*

Review of the conic sections and simple properties. Introduction to solid analytic geometry. (Half course.)

TEXT: Rider, *Analytic Geometry*.

PREREQUISITE: Mathematics 110, 111, 112.

Day Division: Annually, for first year Engineering students only (lectures three hours a week, *first* term). (Non-engineering students are referred to Mathematics 250).

Mr. Gamble

MATHEMATICS 245.[4a]. *Algebra and Spherical Trigonometry*

Solution of equations, complex numbers, determinants, partial fractions, spherical trigonometry. (Half course.)

TEXT: Rosenbach and Whitman, *College Algebra*.

PREREQUISITE: Mathematics 110, 111, 112.

Day Division: Annually, for first year Engineering students only (lectures three hours a week, *second* term). (Non-engineering students are referred to Mathematics 255).

Mr. Gamble

MATHEMATICS 250. [9a]. *Analytic Geometry*

Properties of the conics, parametric equations, transformation of co-ordinates. Introduction to solid geometry. (Half course.)

TEXT: Smith, Salkover and Justice, *Analytic Geometry*. Second Edition.

PREREQUISITE: Mathematics 111, and knowledge of the principles of Algebra and Trigonometry.

Day Division: 1956-57 (lectures three hours a week, *second* term).

Evening Division: Not offered 1956-57.

Professor Macphail

MATHEMATICS 255. [9b]. *Algebra*

Theory of equations, complex numbers, determinants, mathematical induction, inequalities, and related topics. (Half course.)

TEXT: Rosenbach and Whitman, *College Algebra*.

PREREQUISITE: Mathematics 110, and knowledge of the principles of Analytic Geometry and Trigonometry.

Day Division: 1956-57 (lectures three hours a week, *first* term).

Evening Division: Not offered 1956-57.

Professor Macphail

MATHEMATICS 260. [9c]. *Intermediate Algebra*

Theory of equations, including discriminants and Sturm's Theorem; number systems, groups, matrices and determinants. (Half course.)

TEXT: To be announced.

PREREQUISITE: Mathematics 255.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures three hours a week, *first* term).

Professor Sample

MATHEMATICS 310. [8]. *Calculus and Differential Equations*

A second course in calculus with an introduction to differential equations.

TEXT: Peterson, *Elements of Calculus*.

PREREQUISITE: Mathematics 210.

Day Division: Annually (lectures three hours a week).

Evening Division: Not offered, Winter 1956-57. Offered Summer 1957 (lectures five hours a week).

Professor Richardson

MATHEMATICS 320. [11]. *Advanced Calculus*

Limits and continuity, partial derivatives, vectors, Riemann integral, multiple integrals, line and surface integrals, convergence of series and integrals.

TEXT: A. E. Taylor, *Advanced Calculus*

PREREQUISITES: Mathematics 240 and 245, or 250 and 255, and Mathematics 310.

Day Division: 1956-57 and alternate years (lectures three hours a week).

Evening Division: 1957-58 and alternate years (lectures three hours a week).

Professor Sample

MATHEMATICS 325. [16b]. *Differential Equations*

Ordinary differential equations and applications. (Half course.)

TEXT: Reddick and Kibbey, *Differential Equations*

PREREQUISITE: Mathematics 310.

Day Division: 1956-57 (lectures three hours a week, *first* term).

Professor Macphail

MATHEMATICS 327. *Applied Mathematics*

Fourier series and integral, Laplace Transform, Partial Differential Equations, Gamma, Bessel and Legendre functions; Jacobian, change of variables; Vector analysis, Green's and Stokes' theorems; Complex Variables, mappings, Taylor and Laurent Series, contour integration. (Half course.)

TEXT: To be announced.

PREREQUISITE: Mathematics 250, 255, 325.

Evening Division: 1956-57 (lectures three hours a week, *second* term).

Professor Macphail

MATHEMATICS 330.[10]. *Modern Algebra*

Groups, fields, Galois theory; linear algebra, rings, and related topics. Open only to honours students and graduate students; when taken for graduate credit, additional reading is required.

TEXT: To be announced.

PREREQUISITE: Mathematics 260.

Day or Evening Division: Tutorial hours arranged.

Members of the Department

MATHEMATICS 335.[13]. *Intermediate Statistical Analysis*

Linear and curvilinear regression; frequency distributions in two variables; multiple and partial correlation; other measures of correlation; index numbers; time series. Analysis of variance and covariance; design of experiments; Latin squares and split plot designs; qualitative statistics; non-parametric methods.

TEXT: To be announced.

PREREQUISITE: Mathematics 230, 235.

Evening Division: 1957-58 and alternate years (lectures three hours a week).

MATHEMATICS 345. [15a]. *Solid Analytic Geometry and Linear Algebra*

Transformations of co-ordinates, continuation of matrix algebra, reduction of quadrics to principal axes, projective transformations, and related topics. (Half course.)

TEXT: To be announced.

PREREQUISITE: Mathematics 250, 260.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures three hours a week, *second* term).

Professor Sample

MATHEMATICS 350.[15b]. *Numerical Methods*

Scales of notation introduction to programming; calculus of errors; finite differences, with applications to interpolation, numerical integration, numerical differentiation; methods of matrix inversion, with applications to regression, least squares, curves, curve fitting; numerical solution of differential equations.

PREREQUISITE: Mathematics 210. Knowledge of the elements of differential equations and matrix algebra is also desirable.

TEXT: To be announced.

Day or Evening Division: Tutorial hours arranged.

Dr. Howland

MATHEMATICS 355.[20a and 20b]. *Probability and Statistical Inference*

Logical foundations and axiomatic treatment of probability. Distribution functions in one or more dimensions. Stieltjes integrals. Moments. Binomial, normal, Poisson, chi-squared, t , F distributions. Generating and characteristic functions. Limit theorems. Stochastic convergence and the law of large numbers. Fundamentals in estimation and testing hypotheses. Criteria of consistent, efficient and sufficient estimates. The method of maximum likelihood. The power of a test. Illustrations from physical, biological and social sciences.

TEXT: Mood, *Introduction to the Theory of Statistics*

PREREQUISITE: Mathematics 310.

Evening Division: 1956-57 and alternate years (lectures three hours a week).

Mr. Mayne

MATHEMATICS 365.[12a]. *Complex Variable*

General properties of analytic functions. (Half course.)

TEXT: Copson, *Theory of Functions of a Complex Variable*.

PREREQUISITE: Mathematics 320.

Day Division: 1957-58 and alternate years.

Evening Division: 1956-57 and alternate years (lectures three hours a week, *first* term).

Professor Macphail

MATHEMATICS 370.[12b]. *Special Functions*

TEXT: Copson, *Theory of Functions of a Complex Variable*

PREREQUISITE: Mathematics 365.

Day Division: 1957-58 and alternate years.

Evening Division: 1956-57 and alternate years (lectures three hours a week, second term).

Professor Macphail

MATHEMATICS 375.[17]. *Differential and Integral Equations*

Continuation of Mathematics 325. Theory and application of Laplace transforms. Introduction to integral equations.

TEXT: Churchill, *Modern Operational Mathematics in Engineering*.

REFERENCES: Piaggio, *Differential Equations*

Lovitt, *Linear Integral Equations*

PREREQUISITES: Mathematics 320, 325.

Day or Evening Divisions: (Tutorial hours arranged).

Members of the Department

MATHEMATICS 380.[18a]. *Differential Geometry*

Theory of curves and surfaces. (Half course.)

TEXT: Struik, *Introduction to Classical Differential Geometry*.

PREREQUISITE: Permission of the Department.

Day or Evening Division: (Tutorial hours arranged).

Members of the Department

MATHEMATICS 385.[19a]. *Projective Geometry*

(Half course.)

TEXT: Coxeter, *The Real Projective Plane*

PREREQUISITE: Mathematics 260, 345.

Day or Evening Division: (Tutorial hours arranged).

Members of the Department

MATHEMATICS 390.[21a]. *Problems in Mathematics*

Honours students work a number of advanced problems drawn from various sources. No lectures are given. (Half course.)

PREREQUISITE: Open only to honours Mathematics students.

Day Division: Annually (tutorial hours arranged).

Members of the Department

MATHEMATICS 395. *Directed Special Studies*

Honours students may be required to present a report or thesis on parts of mathematics not included in the courses listed above. (Half course.)

PREREQUISITE: Open only to honours Mathematics students.

Day Division: Annually (tutorial hours arranged).

Members of the Department

Discontinued Courses

Last offered

MATHEMATICS 5. <i>Calculus</i>	1951-52
MATHEMATICS 6. <i>Calculus</i>	1951-52
MATHEMATICS 7. <i>Spherical Trigonometry</i>	1948-49
MATHEMATICS 14. [Statistics 2]. <i>Statistical Services</i>	1950-51

MUSIC

(See Fine Arts)

PHILOSOPHY

Assistant Professor; Chairman of the Department, 1956-57

J. C. S. Wernham, M.A., S.T.M.

Assistant Professor Bernard Wand, M.A. Ph.D.*Sessional Lecturer* Mark McClung, M.A. (Oxford)*Assistant* To be appointed

Either Philosophy 210 or 220 satisfies the curriculum required in philosophy. Majors in philosophy are advised, though not required, to take 220 in the second year. Any student majoring in philosophy is advised to consult with the Department. Slight alterations in course pattern for combined majors will ordinarily be permitted.

PHILOSOPHY 210. *Introduction to Philosophy: Systematic*

An examination of the nature of critical thinking and its application to conduct. The course is designed to exhibit the rules of inference which provide a distinction between valid and invalid reasoning as applied to any subject matter. Consideration is then given to the nature of meaning as it applies in ordinary discourse and to the nature of inductive reasoning particularly as it appears in the inquiries of the natural sciences. Finally, an attempt is made to examine the nature of reasoning in resolving problems of morality.

Day Division: Annually (lectures two hours a week, discussion one hour a week).

Evening Division: 1956-57 and alternate years (lectures two hours a week, discussion two hours fortnightly). Also Summer 1956 (lectures four hours a week).

Professor Wand and Mr. McClung

PHILOSOPHY 220. [3, 310]. *Introduction to Philosophy: Historical*

This course is designed to introduce the student to the thought of the age in which were laid the foundations of our intellectual heritage; and thereby to acquaint him with the basic problems of thought and conduct. An account will be given of the origins and early history of philosophical speculation in the Greek world, of the role of the Sophists and of Socrates; and a detailed study will be made of some of the writings of Plato and Aristotle.

Day Division: Annually (lectures two hours a week, discussion one hour a week).

Evening Division: 1957-58 and alternate years (lectures two hours a week, discussion two hours fortnightly).

Professor Wernham

PHILOSOPHY 320. [4]. *History of Philosophy: Modern*

A survey of philosophy from the Renaissance, with special study of humanism (Leonardo da Vinci), pantheistic naturalism (Giordano Bruno), the rise of natural science (Copernicus, Galileo), rationalism (Descartes, Hobbes, Spinoza, Leibniz), British empiricism (Bacon, Locke, Berkeley, Hume), the critical philosophy of Kant. Extensive readings in the original literature will be required.

PREREQUISITE: Philosophy 210 or 220; or permission of the Department.

Day Division: Annually (lectures and discussion three hours a week).

Evening Division: 1956-57 and alternate years (lectures two hours a week, discussion two hours fortnightly).

Professor Wernham

PHILOSOPHY 330.[5]. *Nineteenth and Twentieth Century Philosophy*

This course is designed to conclude the historical survey of philosophy and also to provide a systematic investigation of certain main problems arising in contemporary theory of knowledge. Topics to be examined will include the idealist movement from Hegel to the present day; positivism; dialectical materialism; the rise of pragmatism and philosophies of evolution; contemporary logical empiricism and philosophical analysis. Extensive readings in the original literature will be required.

PREREQUISITE: Philosophy 320 or permission of the Department.

Evening Division: Annually (lectures two hours a week).

Professor Wand

PHILOSOPHY 340. *Ethics*

A historical and critical analysis of the chief concepts used to explain and justify moral thinking and conduct. The theoretical accounts of the concepts of 'right', 'duty' and 'good', as they are found in the writings of modern and contemporary philosophers, are considered. An analysis of the nature of egoism, sympathy and altruism is given in an attempt to determine the possibility of disinterested actions. Finally, the relationship between morality and certain political, religious and scientific beliefs is examined.

PREREQUISITE: Philosophy 210 or 220; or permission of the Department.

Day Division: Annually (lectures and discussion three hours a week).

Professor Wand

PHILOSOPHY 350.[7]. *Religion and Philosophy*

An investigation, both historical and systematic, into the relations between faith and reason; together with an examination of the question of the existence and nature of God. Texts to be studied will be representative of mediaeval Scholasticism, German Idealism, and contemporary Existentialism.

PREREQUISITE: Permission of the Department.

Day Division: 1956-57 (seminar two hours a week).

Professor Wernham

PHILOSOPHY 380. *Seminar for Advanced Students*

A seminar on a subject to be decided annually. Subjects for 1956-57: *Aesthetics*.

PREREQUISITE: Permission of the Department. (Although this course is intended primarily for students majoring in philosophy, an advanced student in any field may apply for admittance.)

Day Division: 1956-57 (seminar two hours a week).

Professor Wernham

Discontinued Courses

Last offered

PHILOSOPHY 2. <i>Introduction to Philosophy</i>	1948-49
PHILOSOPHY 2. <i>Critical Thinking</i>	1951-52
PHILOSOPHY 6. <i>Theory of Value</i>	1951-52

PHYSICS

Associate Professor	A. M. Munn, M.Sc., Ph.D., F.R.S.A.
Chairman of Department, 1956-57	
Associate Professor	G. R. Love, M.A., Ph.D.
Assistant Professors	A. C. Ghosh, M.Sc., G. J. van der Maas, D.Sc. (Amsterdam)
Lecturer	T. J. S. Cole, B.Sc. (Eng.), B.Sc., A.C.G.I. (on leave of absence, 1956-57)

Students planning to take but one course in Physics should take Physics 110.

Students taking Physics as a minor should take Physics 210 and 305 and any others as specified by the department of their major.

PASS COURSE

Pass B.Sc. or B.A. students taking Physics as a major must take Physics 210, 305, 315, 320, and 330, and at least one of Physics 310, 318, 325.

HONOURS COURSE

(For information regarding preparation for admission to the Ontario College of Education for the Interim High School Assistants' certificate, Type A, students are invited to consult the Registrar.)

Basic requirements—The first and second years of the pass science course, preferably including Physics 210 in the second year.

Honours requirements—At least 15 courses beyond second year—those of the following which have *not* been taken in the second year:

1. At least 12 courses in Physics: Physics 210 and at least 11 others, including Physics 360.
2. At least 5 courses in Mathematics: Mathematics 210, 250*, 255*, 310, 320 and one other. (An asterisk indicates a half course.)
3. Two additional courses, not physics, not Mathematics, ordinarily chosen from the humanities or social sciences.

At the end of the fourth and fifth years comprehensive examinations are given in physics and related mathematics. At the end of the fifth year a thesis must be submitted—listed as Physics 360.

PHYSICS 110.[1]. *Basic Physics*

This is planned for students who will not be taking any further courses in Physics. Physics is presented as it has developed in history; and as it now exists as an organized scheme of and method for acquiring knowledge.

TEXT: Kolin, *Physics, Its Laws, Ideas and Methods*.

PREREQUISITE: Mathematics 110, 111, 112 (may be taken concurrently).

Day Division: 1956-57 (lectures two hours a week, laboratory and problems three hours a week).

Professor Munn

PHYSICS 210.[2a and 2b]. *General Physics*

Elementary mechanics, heat, properties of matter, wave-motion, light, and sound.

TEXT: Shortley and Williams, *Physics*, Vol. I and II

PREREQUISITE: Mathematics 210 (may be taken concurrently).

Day Division: Annually (lectures and problems three hours a week, laboratory three hours a week).

Evening Division: 1956-57 (lectures and problems three hours a week, laboratory three hours a week).

Professors Ghosh and van der Maas

PHYSICS 305.[3a and 3b]. *Electricity*

This covers electricity at an intermediate level from electrostatics through direct current flow, electromagnetism to alternating current circuits and elementary electronics.

TEXT: Shortley and Williams, *Physics*, Vol II

PREREQUISITE: Mathematics 210. (Mathematics 310 should be taken concurrently.)

Day Division: Annually (lectures and problems three hours a week, laboratory three hours a week).

Professor Love

PHYSICS 306.[3a]. *Elementary Electricity*

The first half of Physics 305: electrostatics, direct current flow, magnetism, and elementary electromagnetic phenomena. (Half course.)

Day Division: Annually, for second-year, Course B, Engineering students only (lectures and problems three hours a week, laboratory three hours a week, first term).

Professor Love

PHYSICS 310.[4]. *Thermodynamics*

An advanced course in heat and thermodynamics.

TEXT: Zemansky, *Heat and Thermodynamics*

PREREQUISITES: Physics 210 and Mathematics 210.

Not offered 1956-57.

PHYSICS 315.[5a]. *Physical Optics*

An advanced course in optics.

TEXT: Valasek, *Introduction to Theoretical and Experimental Optics*

PREREQUISITES: Physics 210 and Mathematics 210.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures three hours a week, laboratory three hours a week).

Professor Love

PHYSICS 318.[12]. *Electronics*

A.C. circuit analysis and a thorough discussion of the application of vacuum and gas tubes.

TEXT: Ryder, *Electronic Fundamentals and Applications*

PREREQUISITES: Physics 305 and Mathematics 210.

Not offered 1956-57.

PHYSICS 320.[6]. *Vector Mechanics*

An intermediate course on mechanics, using methods of vector analysis.

TEXT: Synge and Griffith, *Principles of Mechanics*.

PREREQUISITES: Physics 210 and Mathematics 310. (Mathematics 310 may be taken concurrently with special permission.)

Day Division: 1956-57 (one three-hour seminar a week).

Evening Division: Not offered 1956-57.

Professor van der Maas

PHYSICS 325.[7]. *Electromagnetism*

An advanced study of electromagnetism, using the methods of vector analysis.

TEXT: Harnwell, *Principles of Electricity and Electromagnetism*.

PREREQUISITES: Physics 305 and Mathematics 310. (Mathematics 310 may be taken concurrently with special permission.)

Day Division: 1956-57 (one three hour seminar).

Professor Munn

PHYSICS 330.[8]. *Atomic Physics*

The molecular-atomic theory of matter.

TEXT: Peaslee, *Elements of Atomic Physics*

PREREQUISITES: Physics 210 and 305, and Mathematics 210. (Physics 305 may be taken concurrently with special permission.)

Day Division: 1956-57 (lectures three hours a week, laboratory three hours a week).

Professor Ghosh

PHYSICS 335.[9]. *Theoretical Physics*

Advanced mechanics and an introduction to wave mechanics, matrix mechanics and relativistic theory.

TEXT: Slater and Frank, *Theoretical Physics*.

PREREQUISITE: For fifth-year honours Physics students only, except by special permission of the Department.

Day Division: 1956-57 (one three hour seminar).

Professor Munn

PHYSICS 340.[10]. *Modern Physics*

Topics included are: Heat, kinetic theory of gases, statistical mechanics, nuclear physics, and electromagnetic theory with applications.

TEXTS: Slater and Frank, *Theoretical Physics*.

Richtmyer and Kennard, *Modern Physics*.

PREREQUISITE: Open to students honouring in physics.

Day Division: Not offered 1956-57.

PHYSICS 345.[11]. *Laboratory Technique*

An advanced laboratory course designed to train students in laboratory technique.

PREREQUISITE: For students in fourth year honours Physics.

Day Division: 1956-57 (six hours laboratory).

Members of the Department

PHYSICS 350.[16]. *Mathematics of Physics*

A course in the mathematical tools of Physics.

TEXT: Margenau and Murphy, *The Mathematics of Physics and Chemistry*.

PREREQUISITE: Open only to honours Physics students, except by special permission of the Department.

Day Division: 1956-57 (one three hour seminar).

Professor van der Maas

PHYSICS 360.[13]. *Laboratory Project*

An advanced laboratory project course requiring some original research and the presentation of a thesis.

PREREQUISITE: For students in fifth-year honours Physics.

Day Division: 1956-57 (six hours of laboratory projects). Members of the Department.

Discontinued Courses

Last offered

PHYSICS 14b. *Mechanics* 1950-51

PHYSICS 15. *Mathematics of Physics I* 1950-51

POLITICAL SCIENCE

Professor	R. O. MacFarlane, M.A., Ph.D.
Associate Professor	D. C. Rowat, A.M., Ph.D.
	(on leave of absence, 1956-57)
Assistant Professor; Chairman of the Department, 1956-57	K. D. McRae, A.M., Ph.D.
Assistant Professor	Pauline Jewett, M.A., Ph.D.
Lecturer	C. J. Webster, M.A., B.Sc. (Econ.)
Sessional Lecturers	E. A. Forsey, M.A., Ph.D.
	W. E. Grasham, M.A.

PASS COURSE

Students taking a major in Political Science will normally take Political Science 210, 310, 360, and at least two other courses in Political Science. Their whole programme must be approved by the Chairman of the Department.

HONOURS COURSES

Political Science. Students taking honours in Political Science will be required to take at least nine courses in this field, including Political Science 210, 310, 340, 360, 390, and 320 or 325 or 350.

They will be encouraged and assisted to make use of the unique advantages Ottawa offers in personnel and material in the fields of politics, government and public administration. Essays and papers on special topics will be required regularly and candidates will normally be asked to present a graduation essay on some topic involving independent investigation, the subject to be chosen in consultation with a full-time member of the Department.

An honours student in Political Science will be expected to take a minor in some other subject, preferably Economics, History, Sociology, or Philosophy. He will also be required to show, by his final year, a reading knowledge of a modern language other than English.

Economics and Political Science. Students intending to enter this programme should take Economics 210 or Political Science 210 (or preferably both) in the second year. The choice of courses in subsequent years will be subject to the approval of the chairman of the two departments. The honours requirements include at least six courses in Economics and six courses in Political Science; normally a student will take at least 14 courses in Economics, Political Science, and related fields. These will be arranged so that the student may transfer either to full honours in Economics or to full honours in Political Science at the end of the fourth year, if he then wishes to specialize more intensively.

Public Administration. Undergraduate and graduate programmes of study in the School of Public Administration are outlined on pp. 69-74.

Students who wish to major (or to take honours) in Political Science will be expected to fulfill the summer reading requirements.

POLITICAL SCIENCE 210. [2]. *Introduction to Political Science*

An introduction to the theory and practice of modern political ideas and institutions, with particular attention to the structure of the government of Canada.

TEXTS: Corry, *Democratic Government and Politics*.

Dawson, *The Government of Canada*.

Day Division: Annually (lectures two hours a week, group discussion one hour a week).

Evening Division: Annually (lectures two hours a week, group discussion one hour a week). Also Summer 1956 (lectures five hours a week).

Professor McRae, Mr. Graham, and members of the Department

POLITICAL SCIENCE 310.[3]. *Comparative Government*

A comparative study of the governments of the United Kingdom, the United States of America, and Australia.

TEXTS: Jennings, *The British Constitution*, or Stout, *British Government*
Ogg and Ray, *Essentials of American Government*
Sawyer, *Australian Government Today*

PREREQUISITE: Political Science 210.

Day Division: Annually (lectures two hours a week, group discussion one hour a week).

Evening Division: 1956-57 and alternate years.

Professor Jewett

POLITICAL SCIENCE 320.[11]. *Canadian Federalism*

Constitutional, economic and political aspects of Canadian federalism with, some reference to the problems of federalism generally.

PREREQUISITE: Political Science 210.

Evening Division: 1956-57 (lectures and discussion three hours a week).

Professor Jewett

POLITICAL SCIENCE 325. *Government of Canada*

A seminar on topics in Canadian government. Reports will be presented and discussed in class on such topics as institutions, procedures, politics, group influences, and control agencies.

PREREQUISITE: Political Science 210, and preferably a further course in Political Science.

Evening Division: Annually (seminar three hours a week).

Professor MacFarlane

POLITICAL SCIENCE 330.[13]. *Soviet Russia*

An introduction to the study of the contemporary Soviet Union: A brief survey of the geographical and general historical background before and after 1917; an examination of the government, politics, law, ideology, institutions, economy, society, and of the domestic and foreign policies of the Imperial and Soviet regimes; an assessment of the significance of the U.S.S.R. in the contemporary world.

PREREQUISITE: Preferably Political Science 210 and a further course in Political Science.

Evening Division: 1956-57 (lectures and discussions three hours a week).

Mr. Webster

POLITICAL SCIENCE 340.[6]. *Problems in Public Administration*

A comprehensive survey of problems in Canadian public administration, with concentration on those at the national level. The course includes an examination of: departmental organization in theory and practice, informal organization and the human element, semi-independent agencies, intergovernmental administration, the dynamics of management (decision-making, planning, coordinating, etc.), financial and personnel administration, administrative discretion, and the system of responsibility in a democracy. The seminar work includes use of the case-study technique as developed at Harvard University.

TEXTS: Simon *et al.*, *Public Administration*.

Cole, *The Canadian Bureaucracy*.

Buck, *Financing Canadian Government*.

Institute of Public Administration of Canada, *Proceedings*.

PREREQUISITE: Political Science 210, and preferably a further course in Political Science.

Evening Division: Annually (lectures two hours a week, seminar one hour a week).

Mr. Grasham

POLITICAL SCIENCE 350. [17]. *Seminar in Provincial and Municipal Government*
An advanced course dealing with problems of provincial and municipal government and administration, and with problems of inter-governmental relations.

PREREQUISITE: Political Science 210, and preferably a further course in Political Science.

Evening Division: 1956-57 (seminar three hours a week).

Professor MacFarlane

POLITICAL SCIENCE 360.[4]. *History of Political Thought*

A general survey of the history of some phases of thought, with special reference to political theory, from ancient times to the close of the eighteenth century. A course in ideas, their sources, their validity, and their significance. Some of the works of the following authors are among the material considered: Plato, Aristotle, Machiavelli, Bodin, Hobbes, Locke, Rousseau, and Burke.

Evening Division: Annually (lectures two hours a week, discussion one hour a week).

Professor McRae

POLITICAL SCIENCE 365. *Modern Political Thought*

A seminar on the political thought of the nineteenth and twentieth centuries. The main emphasis in this course will be upon the origins, development and significance of three major political doctrines: liberal democracy, marxism, and fascism.

PREREQUISITE: Political Science 360, or permission of the Department.

Day and Evening Divisions: Annually (seminar three hours a week).

Professor McRae

POLITICAL SCIENCE 390. [14]. *Tutorial in Political or Administrative Research*

This course, for honours students only, is designed for training in research techniques and for the discussion and criticism of honour graduation essays, and other special research projects pursued under the auspices of the Department in connection with the facilities available in the Public Archives of Canada, the Library of Parliament, and the government departments.

Day Division: Annually (hours arranged).

Members of the Department

POLITICAL SCIENCE 540. *Seminar in the Theory and Practice of Administration*

An advanced seminar in which reports will be presented and discussed on specific problems in public administration. Experienced government officials will take part in the seminar from time to time.

PREREQUISITE: Political Science 340 (or equivalent) and permission of the Department.

Evening Division: Annually (seminar three hours a week).

Professors MacFarlane and Jewett, and Mr. Grasham

POLITICAL SCIENCE 590. *Directed Study in a Selected Field*

This course will be conducted as a tutorial for students taking the M.A. degree in Public Administration who do not elect to write a thesis. The topic will be arranged by the Director to meet the student's special interest, and will include a research essay.

PREREQUISITE: Permission of the Department.

Day Division: Annually (hours to be arranged).

Members of the Department

See Also:

SOCIOLOGY 368. *Sociology of Political Power*

HISTORY 380. *An Introduction to International Relations*

PUBLIC LAW 310. *The Elements of Public Law*

Discontinued Courses

Last offered

POLITICAL SCIENCE 1. *The Government of Canada* 1947-48

POLITICAL SCIENCE 7. [Personnel Management 102]. *Civil Service Principles and Legislation* 1949-50

POLITICAL SCIENCE 355. [18]. *Seminar in Democratic Administration* . . . 1952-53

POLITICAL SCIENCE 370. [9]. *Tutorial in Modern English Political Thought* 1950-51

POLITICAL SCIENCE 375. [12]. *Tutorial in European Political Thought* . 1949-50

POLITICAL SCIENCE 380. [10]. *Seminar in Political Philosophy (The State and the Individual)* 1950-51

PSYCHOLOGY

Associate Professor; Chairman of the Department, 1956-57 F. R. Wake, B.A., Ph.D.
Assistant Professor H. J. Breen, M.A., Ph.D.
Sessional Lecturers F. E. Whitworth, A.M., Ph.D.
 R. A. Wendt, M.A.; June B. Pimm, B.A.; M.Ps.Sc.; A.M.; Douglas Ayers, B.A., B.Ed., Ph.D.

PASS COURSE

In order to complete a pass degree with a major in Psychology, the student must have credit for the following: Psychology 210, 305, 390; Economics 320 or Mathematics 230, 235, and two additional courses in Psychology.

The Department of Psychology pursues a policy of integrating classroom work with observation periods, field trips, and research projects within the many and varied institutions in and about the City of Ottawa. Such a policy permits the student to see the importance of theoretical studies to the practical applications in human behaviour.

PSYCHOLOGY 210. [2]. *General Psychology*

A survey of general psychology. A systematic study of sensation, perception, motivation, learning, emotion, and thought. The psychology of individual differences in intelligence, aptitude, and personality. Psychology applied to study habits, careers, and personal adjustment. Contemporary psychological theories. (A student may not obtain credit for both Psychology 210 and 220.)

TEXT: To be announced.

Day Division: Annually (lectures three hours a week).

Evening Division: Annually (lectures two hours a week).

Professors Wake and Breen

PSYCHOLOGY 220. *Human Engineering*

The study and application of principles of human behavior in the fields of industry, business and government. Designed to be of value to students in engineering, science and other practical professions who may not be able to pursue the study of psychology further. (A student may not obtain credit for both Psychology 210 and 220.)

PREREQUISITE: None.

Evening Division: Not offered 1956-57.

PSYCHOLOGY 305. *Experimental Psychology*

An introduction to psychological research, including an examination of methods, theories, and preparation of reports. A number of experiments will be carried out in the laboratory.

TEXT: To be announced.

PREREQUISITE: Psychology 210, which may be taken concurrently; or permission of the Department.

Day Division: Annually (two two-hour laboratory periods a week).

Professors Wake and Breen

PSYCHOLOGY 310. [6]. *Social Psychology*

A survey of the more important and enduring problems of social psychology, including methods of research. Group dynamics will receive a considerable amount of attention. (This course is listed also as Sociology 310.)

Day Division: 1956-57 (lectures three hours a week).

PSYCHOLOGY 320. [5]. *Child Psychology*

This course traces the growth and development of the child from birth through adolescence. Considerable use will be made of case histories and suitable films. Several texts and a variety of reference materials will be used. Students will be required to observe and report on behaviour of children.

PREREQUISITE: Psychology 210.

Day Division: Not offered 1956-57.

Evening Division: 1956-57 (lectures two hours a week).

Professor Wake

PSYCHOLOGY 330. *Foundations of Psychological Testing*

Theoretical foundation for construction and standardization of psychological tests Survey of types and uses of current test material. (Half course.)

TEXT: To be announced.

PREREQUISITES: Psychology 210; Economics 320 or Mathematics 230, 235 (may be taken concurrently).

Evening Division: 1956-57 (lectures two hours a week, *first term*).

Dr. Ayers

PSYCHOLOGY 335. *Psychological Testing*

Lectures on methods of administering and scoring tests. Practice in psychological testing. Students will be required to give and score Stanford-Binet, Wechsler-Bellevue, Kuder Preference, and other tests. (Half course.)

TEXT: To be announced.

PREREQUISITE: Psychology 330.

Evening Division: 1956-57 (lectures and practice two hours a week, *second term*).

Mrs. Pimm

PSYCHOLOGY 340. [4, Personnel Management 100]. *Personnel Psychology I*

This course considers the needs of personnel administrators. It deals with current problems and procedures in personnel management, including: employer interviewing and selection, up-grading and training methods, office management, group dynamics, mental hygiene.

TEXTS: To be announced.

PREREQUISITE: Psychology 210. Recommended: Mathematics 230 or Economics 320.

Evening Division: Not offered 1956-57.

PSYCHOLOGY 345. *Personnel Psychology II*

This course considers the contribution of psychology to business, industry, civil service, etc., including labour-management relations, job-analysis, advertising, working conditions, publications.

TEXT: To be announced.

PREREQUISITES: Psychology 210, and Psychology 340 or permission of the Department.

Evening Division: 1956-57 (two hours a week).

Dr. Whitworth

PSYCHOLOGY 370. [7]. *Theory of Personality and Adjustment*

This course deals with theories of personality and considerations of processes of normal and abnormal behaviour from the mental health viewpoint. The course introduces techniques of personality evaluation which serve as indicators of normal and abnormal adjustments.

TEXTS: To be announced.

PREREQUISITE: Psychology 210.

Day Division: 1956-57 (lectures three hours a week).

Evening Division: Not offered 1956-57.

Professor Wake

PSYCHOLOGY 380. *Psychoanalysis and Motivation*

This course presents a general survey of the important contributions of the various psychoanalytic schools. Common popular misconceptions about psychoanalysis will be discussed and clarified. An attempt will be made to provide a meaningful integration of the basic discoveries of the major "classical" analysts (Freud, Jung, and Adler), and those of the "modern" school (Fromm, Horney, et al). These concepts will be evaluated within the framework of the psychology of motivation, learning, and perception.

PREREQUISITE: Psychology 370, or permission of the department.

Evening Division: 1956-57 (discussion seminars, two hours a week).

Professor Breen

PSYCHOLOGY 390. *History of Psychology*

The evolution of psychology from Aristotle to date, with emphasis on persisting psychological problems and their treatment in various theories.

TEXTS: To be announced.

PREREQUISITE: Psychology 210. Open to fourth-year students only.

Evening Division: 1956-57 (seminar two hours a week).

Mr. Wendt

PSYCHOLOGY 505. *Advanced Design of Psychological Experiments*

This course explores the design of experiments through measures of central tendency, correlation, analysis of variance and co-variance, and other advanced techniques. The student will be required to display a well-founded knowledge of the logic basic to research, as well as true competence in computation.

PREREQUISITE: B.A. with major in psychology and permission of department.

TEXT: To be announced.

Not offered 1956-57.

Discontinued Courses

Last offered

PSYCHOLOGY 3. *Applied Psychology* 1949-50

PSYCHOLOGY 380. [8]. *The Psychology of Political Groups* 1952-53

See also Economics 320. *Statistical Methods in the Social Sciences*

Mathematics 230, 235. *Elementary Mathematical Statistics*

PUBLIC ADMINISTRATION

(See Political Science)

PUBLIC LAW

Chairman of the Department, 1956-57 R. O. MacFarlane, M.A., Ph.D.

Sessional Lecturers G. F. Henderson, B.A., Q.C.

A. A. Cattnach, B.A., LL.B., Q.C.

PUBLIC LAW 310. [1, 100]. *The Elements of Public Law*

An introduction to the study of law, designed to acquaint the non-lawyer with the principal institutions, concepts, and classifications of the law, with special reference to Canada.

Evening Division: 1956-57 (lectures 2½ hours a week, seminars arranged).

Mr. Henderson

PUBLIC LAW 510. [320, 3, 103]. *Administrative Law*

This course is designed as a study of the field of administrative law in the light of current social and economic problems and relationships and in the light of the trends of modern legislation, with particular reference to Canada. Theories influencing development in the field; delegated legislation and delegated adjudicative power, their nature and extent, reasons for delegation, dangers; judicial and extra-judicial review and control; administrative procedure; suggested reforms.

PREREQUISITE: Public Law 310 or permission of the Department.

Evening Division: 1956-57 (lectures 2½ hours a week, seminars arranged).

Mr. Cattnach

Discontinued Course

Last offered

PUBLIC LAW 2. [102]. *The Constitutional Law of Canada* 1950-51

See also History 330, *Canada from 1791*

Political Science 320, *Seminar in Canadian Federalism*

RELIGIOUS KNOWLEDGE

Sessional Lecturer Simon L. Eckstein, B.A., B.R.E., M.A.

RELIGIOUS KNOWLEDGE 305. *Old Testament Literature*

A critical and literary study of Old Testament literature in the light of history, archaeology, ancient and modern commentators. Religious and social background of the writings. Personalities of the Old Testament, their ideas and ideals. Textual study of representative texts in the Pentateuch, Prophets and Hagiographa. Tradition and Higher Biblical Criticism. Canonization and translations. Old Testament influence on the world's great religions and on man's modern culture. Open to upper year students having some previous acquaintance with the fields of Philosophy and Psychology.

Final arrangements announced, Fall Registration, 1956.

RELIGIOUS KNOWLEDGE 310. [1]. *New Testament Literature*

An introduction to the history and literature of the New Testament. Religious and social background of the writings of the New Testament. The Four Gospels, their origins and the problems of their authorship and composition, including the Synoptic and Johannine problems. The life and letters of Paul and the beginnings of the Christian Church. The non-Pauline epistles and the Christian Apocalypse. The relation of Christian ethics to modern life.

Final arrangements announced, Fall Registration, 1956.

RELIGIOUS KNOWLEDGE 320. *The Great Non-Christian Religions*

Distinguishing characteristics of religion. Primitive religion. The religion of ancient Egypt. The history, principles, practices, and literature of Hinduism, Buddhism, Confucianism, Taoism, Shinto, Zoroastrianism, Judaism, and Islam. The strength and weakness of the various faiths, and their present vitality. Areas of possible or actual conflict and co-operation. Comparison of Christianity with these religions.

TEXTS: Noss, *Man's Religions* (Macmillan); Ballou, *World Bible* (Viking Press)

Evening Division: 1956-57 (lectures two hours a week).

Rabbi Eckstein

RUSSIAN

Special Lecturer; Chairman of the Department, 1956-57

Sessional Lecturer D. I. Lalkow, M.D.
V. N. Litwinowicz, M.Ph., Litt.D.

Assistant To be appointed

Note: Students in all classes are advised to procure Müller's Russian-English and English-Russian dictionaries.

RUSSIAN 51. [A]. *Beginner's Russian*

The work comprises the elements of grammar; orthography, writing, pronunciation, accentuation and reading of easy texts. Translation of exercises from Russian into English and from English into Russian. Elementary conversational practice. (Credit is given for this course only upon the subsequent completion of Russian 110).

TEXTS: George A. Znamensky, *Conversational Russian*

A. Semeonoff, *A New Russian Grammar*

Evening Division: 1956-57 (lectures three hours a week).

Lecturer to be appointed

RUSSIAN 110. [1]. *Russian Language*

Review of twenty-five lessons in G. A. Znamensky's *Conversational Russian*. By then the students will have a vocabulary sufficient for simple conversation and for easy translations. Simple narratives of Russian life, customs and history, with short stories from Chekhov, Turgenev, Tolstoy and others.

TEXTS: George A. Znamensky, *Conversational Russian*

Birkett and Struve, *Chekhov Selections* and other *Oxford Russian Readers*

A. Semeonoff, *A New Russian Grammar*

PREREQUISITE: Russian 51.

Evening Division: 1956-57 (lectures three hours a week).

Dr. Litwinowicz

RUSSIAN 210. [2]. *Russian Language and Readings*

Advanced course in grammar and syntax as exemplified in Russian prose. The main object of this course is the acquisition of the "feel" of the language. Conversation; translation. Further reading from Russian literature as indicated in Russian 110.

TEXTS: Coulson and Duddington, *Russian Short Stories 19th Century* and other *Oxford Russian Readers*

A. Semeonoff, *A New Russian Grammar*

PREREQUISITE: Russian 110.

Evening Division: 1956-57 (lectures three hours a week).

Dr. Litwinowicz

RUSSIAN 320.[3]. *Russian Language and Literature* (advanced)

Brief survey of Russian literature. Writing of essays, translations from English into Russian, conversation; translation of one of the main works of Russian 19th century literature. Course conducted in Russian only.

TEXTS: To be announced later

REFERENCE TEXTS: Ivan Tkhorzhevski, *Russkaya literatura*

D. S. Mirsky, *A History of Russian Literature*

PREREQUISITE: Russian 210

Evening Division: 1956-57 (lectures three hours a week).

Dr. Litwinowicz

N.B. The Prerequisite is not necessary for persons taking any course on a non-credit basis.

RUSSIAN 510. *Introduction to Slavonic Studies*

This course is intended for mature students with demonstrated competence in the Russian language. It will outline the history and civilization of Russia and other Slavonic nations.

ADMISSION REQUIREMENTS:

A bachelor's degree from a recognized college or university, including the undergraduate course in Russian (equivalent of Russian 310 or 320), or permission of the Department. Full details may be obtained from Dr. Litwinowicz.

Final arrangements announced, Fall Registration, 1956.

SOCIAL POLICY

(This listing discontinued after 1949-50)

Discontinued Courses

Last offered

SOCIAL POLICY 1.[101]. *Social Legislation* 1949-50

SOCIAL POLICY 2.[102]. *Labour Policy* 1948-49

SOCIOLOGY

(including Anthropology)

Assistant Professor; Chairman of the Department, 1956-57

J. A. Porter, B.Sc. (Econ.)

Lecturer Muni C. Frumhartz, B.A., A.M.

Sessional Lecturer June H. MacNeish, Ph.B., A.M.

Students who wish to major in Sociology will be expected to select in addition to the five required courses in the major field, courses in related fields. The most important of these related fields are: Psychology, Economics, Political Science, History, Geography and Biology. Selection will be made in consultation with the Department. Students who wish to major in Sociology will be expected to fulfill the summer reading requirements.

Students interested primarily in Anthropology are advised to take Sociology 320, 330, 340, 350 and 352 following Sociology 210.

SOCIOLOGY 210.[1]. *Introduction to Sociology and Anthropology*

A comparative study of social institutions and social structure, aimed at analyzing basic forms of social relations, social groups, social control, and the conditions of social change. Attention is paid to both the simpler peoples and complex societies.

Day Division: Annually (lectures two hours a week, group discussion one hour a week).

Evening Division: Annually (lectures two hours a week, group discussions arranged).

Professor Porter and Mr. Frumhartz

SOCIOLOGY 310.[6]. *Social Psychology*

Day Division: 1956-57 (lectures three hours a week).

Lecturer to be announced

SOCIOLOGY 310.[6]. *Social Psychology*

An examination of the psychological conditions of social life. Review of theories of motivation and their usefulness in social theory. Psychological analyses of religion and morals, war and group conflict, political power and authority, public opinion and propaganda, crime, fashion, national and racial characteristics. (This course is also listed as Psychology 310.)

PREREQUISITE: Psychology 210.

Day Division: 1956-57 (lectures two hours a week, group discussion one hour a week).

Evening Division: 1956-57 (lectures two hours a week, group discussions arranged).

Lecturer to be announced

SOCIOLOGY 320.[3a]. *Race and Culture Contacts*

A survey of the problems arising from the contacts of peoples of different races and cultures. Particular attention will be paid to Canadian problems. (Half course.)

PREREQUISITE: Sociology 210.

Not offered 1956-57.

SOCIOLOGY 330.[4b]. *Archaeology and Ethnology*

A consideration of the aims and methods of archaeology and ethnology presented in terms of Canadian pre-history. A brief archaeological excavation in the field will be arranged. (Half course.)

PREREQUISITE: Sociology 210 or permission of the Department.

Not offered 1956-57.

SOCIOLOGY 340.[7]. *Human Origins*

A survey of the physical and cultural development of man from his earliest known beginnings to the early food-producing horizons. The course comprehends the physical evolution of man and his concomitant cultural growth.

Not offered 1956-57.

SOCIOLOGY 350. *Tutorial in Sociology*

A course to permit a student to pursue his interests in a particular area of Sociology. During the course the student will prepare papers as the basis of discussion between him and his tutor.

PREREQUISITES: Sociology 210, one other Sociology course (other than Sociology 310) and the permission of the Department.

Day Division: Annually (tutorial hours arranged).

Professor Porter

SOCIOLOGY 352. *Seminar in Anthropology*

A course designed to explore the major lines of anthropological thought and investigation through readings, preparation of papers, and discussion.

PREREQUISITE: Sociology 210 and permission of the instructor.

Not offered 1956-57.

SOCIOLOGY 355. *Statistical Methods in the Social Sciences*

(Offered in the Department of Economics as Economics 320.)

SOCIOLOGY 360.[2]. *Theories and Methods of Sociology*

Scope of sociology. Relationship of sociology to the other social sciences. Main contributions to sociological thought: Comte, Spencer, Marx, Pareto, Hobhouse, Durkheim, Weber, Veblen. Development of sociology in the U.S.A. Critical examination of the techniques employed in contemporary sociological investigation.

PREREQUISITE: Sociology 210.

Day Division: 1956-57 (lectures 2 hours a week, discussion period arranged).

Evening Division: Not offered 1956-57.

Mr. Frumhartz

SOCIOLOGY 365. *Urban Society*

An examination of urbanism as a way of life. The ecological perspective, dealing with land use, population characteristics, and functional relations. The urban society as a form of social organization. The urban personality, urban institutions, and the problems of social control.

Day Division: 1956-57 (lectures two hours a week, group discussions arranged).

Mr. Frumhartz

SOCIOLOGY 366. *Sociology of Work*

Study of the social organization of work in contemporary society, sociological problems in modern industry, sociological analysis of selected occupations, and the relation between work organizations and other forms of social organization in the community.

PREREQUISITE: Sociology 210 or permission of the instructor.

Not offered 1956-57.

SOCIOLOGY 368. *Sociology of Political Power and Social Class and Stratification*

An analysis of political power, institutions and parties based on empirical studies of political elites. The relationships between political, economic, and social power. The psychology of political movements. Criteria of social class and social status. Relationships between social class and economic and political systems. Social mobility. Examination of various class and caste systems and their ideologies.

PREREQUISITE: Sociology 210.

Evening Division: 1956-57 (lectures two hours a week, discussion period arranged).

Professor Porter

SOCIOLOGY 370.[5]. *Sociology of the Primary Group*

An examination of small face-to-face groups and their relationship to the social structure of the larger society. Particular attention will be paid to the family, children's play groups, juvenile gangs, and the industrial working group.

PREREQUISITE: Sociology 210.

Not offered 1956-57.

Discontinued Course

SOCIOLOGY 367. *Social Class and Stratification.* Now combined with Sociology 368.

Last offered 1954-55.

SPANISH

Sessional Lecturers Bohdan Plaskacz, Lic. phil. litt.
J. C. Forster, B.A.

SPANISH 110. [1]. *First-year College Spanish*

Grammar, reading, translation, and oral exercises.

TEXTS: Keniston, *Learning Spanish*; Crow, *Cuentos hispanicos*;
Romera-Navarro, *Historia de Espana*

PREREQUISITE: Junior Matriculation Spanish or (former course) Spanish 51.

Evening Division: 1956-57 (lectures three hours a week).

Mr. Forster

SPANISH 115. *First-year College Spanish* (New Course)

Grammar, reading, translation, and oral exercises.

TEXTS: Pittaro and Green, *Curso moderno de espanol*
Keniston, *Learning Spanish*; Oteyza, *El tesoro de Cuauhtemoc*

Evening Division: 1956-57 (lectures four hours a week).

Mr. Forster

SPANISH 210. [2]. *Second-year College Spanish*

Lectures on the history of Spanish literature and civilization; reading, translation, oral exercises and grammar review.

TEXTS: Romera-Navarro, *Historia de Espana*; America Castro, *Iberoamerica*;
Bodsworth and James, *Cuentos modernos*

PREREQUISITE: Spanish 110.

Evening Division: 1956-57 (lectures three hours a week).

Mr. Plaskacz

SPANISH 310. *Third-year College Spanish*

Spanish literature of the nineteenth century. Reading of selected authors. Introduction to the Historical Grammar of Spanish.

TEXTS: To be announced.

Evening Division: 1956-57 (lectures three hours a week).

Mr. Plaskacz

Discontinued Courses

	<i>Last offered</i>
SPANISH 3. <i>Commercial Spanish</i>	1950-51
SPANISH 4. <i>Third-year College Spanish</i>	1951-52
SPANISH 5. <i>Fourth-year College Spanish</i>	1951-52
SPANISH 11. <i>Beginners' and First-year College Spanish</i>	1951-52
SPANISH 51.[A]. <i>Beginner's Spanish</i>	1955-56

STATISTICS

(This listing discontinued after 1946-47)

Renumbered Courses

New number

STATISTICS 1. [100]. *Introduction to Statistical Methods* . . MATHEMATICS 230, 235

STATISTICS 2. [101]. *Statistical Services* MATHEMATICS 14

For current courses in statistics, see the Departments of Mathematics and Economics.

ZOOLOGY

(See Biology)

From I.O. '69

MASTER PLAN FOR CARLETON COLLEGE

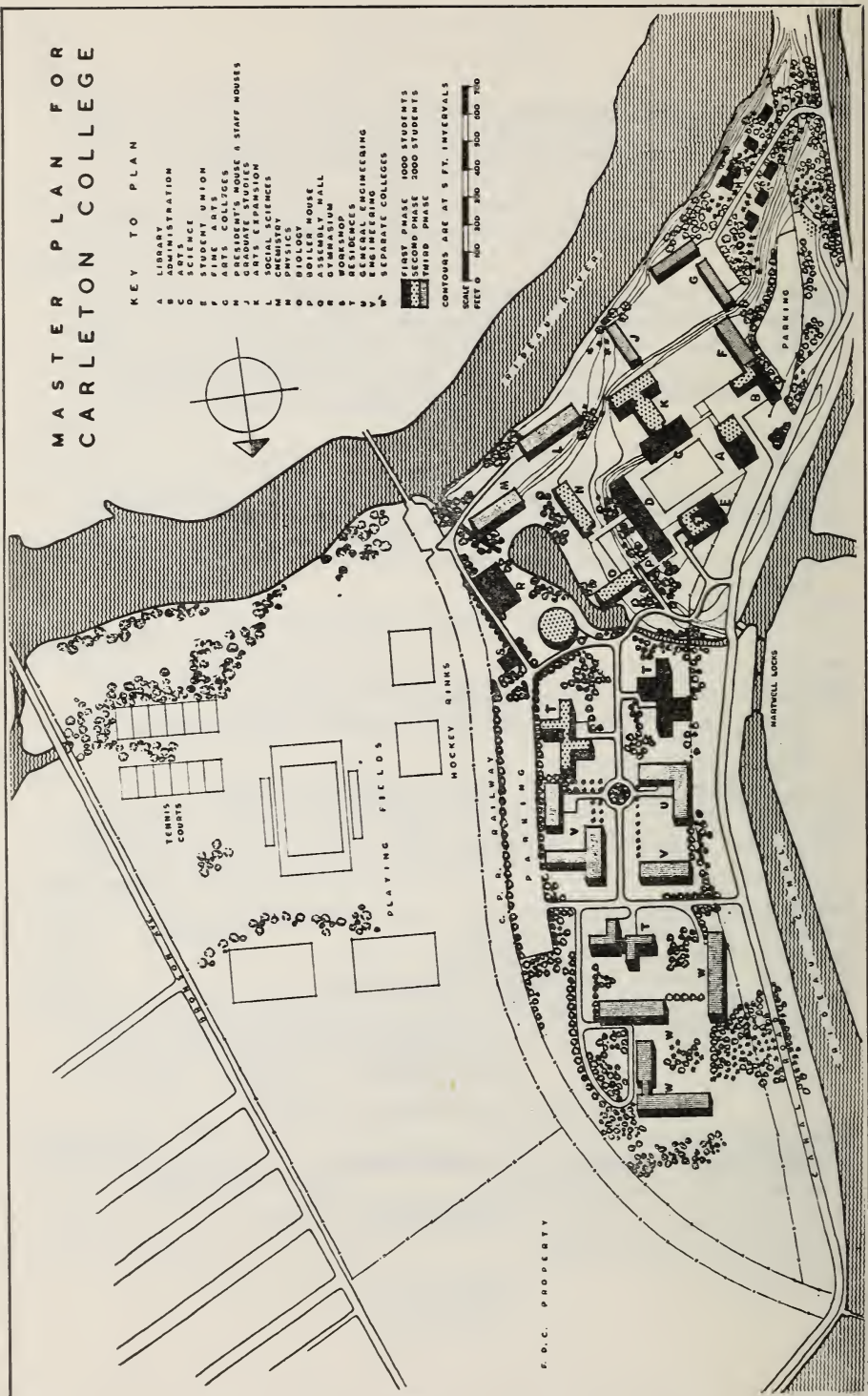
KEY TO PLAN

- A LIBRARY
- B ADMINISTRATION
- C SCIENCE
- D STUDENT UNION
- E PHYSICS
- F LIFE SCIENCES
- G PRESIDENT'S HOUSE & STAFF HOUSES
- H GRADUATE STUDIES
- I ENGINEERING
- J CHEMISTRY
- K SOCIAL SCIENCES
- L MUSIC
- M BIOLOGY
- N BOILER HOUSE
- O ASSEMBLY HALL
- P GYMNASIUM
- Q WORKSHOP
- R RESIDENCES
- S ENGINEERING
- T ENGINEERING
- U ENGINEERING
- V ENGINEERING
- W SEPARATE COLLEGES

FIRST PHASE 1000 STUDENTS
SECOND PHASE 2000 STUDENTS
THIRD PHASE

CONTOURS ARE AT 5 FT. INTERVALS

SCALE
FEET 0 100 200 300 400 500 600 700



E.D.C. PROPERTY

College Office Hours

From September 1st to April 30th, offices are open at the following times:

Monday to Friday	{ 8.45 a.m. to 12.30 p.m. 1.50 p.m. to 9.00 p.m.
Saturday	8.45 a.m. to 12.30 p.m.

From May 1st to August 31st, offices are open at the following times:

Monday and Thursday	{ 9.00 a.m. to 12.30 p.m. 2.00 p.m. to 5.00 p.m. 6.30 p.m. to 8.30 p.m.
Tuesday, Wednesday and Friday	{ 9.00 a.m. to 12.30 p.m. 2.00 p.m. to 5.00 p.m.
Saturday	Closed all day.

Library Hours

Winter Session

Monday to Friday	8.45 a.m. to 10.15 p.m.
Saturday	9.45 a.m. to 12.30 p.m.

Summer Session

Monday and Thursday	{ 9.00 a.m. to 12.30 p.m. 2.00 p.m. to 5.00 p.m. 6.30 p.m. to 10.00 p.m.
Tuesday, Wednesday and Friday	{ 9.00 a.m. to 12.30 p.m. 2.00 p.m. to 5.00 p.m.
Saturday	Closed all day.

Between sessions the library is open in the daytime only.

{ THE RUNGE PRESS LIMITED }
{ OTTAWA CANADA }